HOMEOWNER SATISFACTION AND SERVICE QUALITY IN THE REPAIR OF UK FLOOD-DAMAGED DOMESTIC PROPERTY

By

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This work or any part thereof has not previously been presented in any form to the University or to any other body whether for the purposes of assessment, publication or for any other purpose (unless otherwise indicated). Save for any express acknowledgments, references and/or bibliographies cited in the work, I confirm that the intellectual content of the work is the result of my own efforts and of no other person.

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Abstract

Flooding is a global challenge that has plagued mankind throughout history, affecting over 164 million people worldwide in 2007 alone. As the frequency of flooding increases in England and Wales coupled with an increase in the numbers of properties at risk of flooding and the attendant huge (insured) economic costs of flooding, the services received by homeowners during flood damage repair works, have not been spared criticism. Both the Welsh Consumer Council report and the Warwickshire Trading Standards report raised serious questions about the level of service in insurance claims for the repair of flood-damaged domestic property. This research project was therefore aimed at investigating the level of service quality and determinants of homeowners' satisfaction in England and Wales with respect to flood damage repair works during insurance claims.

A comprehensive literature review was conducted on customers' needs, satisfaction and service quality, flooding and related issues, and the repair of flood damaged domestic property, in order to set the framework for the research and shape the development of the research questions/hypotheses. The study employed a two-phased sequential mixed methods approach, commencing with 20 in-depth interviews with homeowners, repairers, insurers and loss adjusters. Findings from the initial exploratory study (and from the literature review) informed the development of a questionnaire instrument, which incorporated elements of SERVQUAL, the generic service quality measurement instrument. Survey data were collected for the quantitative phase of the study from a sample of 126 homeowners, which was then analysed to test the hypotheses put forward in the study.

The data did not yield a set of reliable and interpretable factors of service quality from the three service quality scales used to measure homeowners' perceptions of the performance of insurers, loss adjusters and contractors. However, of the three key service providers, the contractor's performance was the best predictor of homeowners' overall satisfaction during flood damage reinstatement claims, accounting for seven times the combined unique contribution of insurance and loss adjusting firms. In addition, satisfaction levels were significantly different for homeowners whose claims for repair works were completed within six months compared to those whose repairs exceeded twelve months. The thesis concludes with implications of the findings for practice as well as recommendations for further research. It is argued that knowledge of the determinants of homeowners' satisfaction with services during the repair of flood damaged property, is beneficial not only to insurers, loss adjusters and repairers but to homeowners as well.

I am eternally grateful to my family, particularly my wife, Lynne and our three children: Liseli, Leano and Luendo who were all born within the PhD registration period! Their love, understanding, patience, enormous sacrifice and moral support during this challenging academic expedition, is the single most important human factor to which my success can be attributed. When times were hard and the stress was high, the family was there to provide rock-solid support and encouragement, which enabled me to carry on with the programme of study.

The extended Samwinga family were very supportive and always urging me to complete the studies. Special thanks go to my mum and dad (Grace and Rex Samwinga) for sharing a greater vision for me than I could ever imagine.

Above all, may all the glory and honour be to the Lord, Jehovah Jireh – the provider, for the things he has done and is yet to do, now and forever more, Amen!

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1.1 INTRODUCTION

This chapter is an introduction to the entire thesis, with special attention to the rationale of the study, its aims and objectives, the outline methodology as well as a summary of the research process. In addition, the significance of the study is discussed followed by the delimitation (scope) of the study. An outline of how the thesis is organised and the contents in each chapter of the thesis are also presented in this chapter.

1.2 RATIONALE OF THE RESEARCH

The Environment Agency estimates that five million people, in two million properties live in flood risk areas in England and Wales (Environment Agency, 2002). The figures account for flood risk in terms of river and coastal flooding as well as intra-urban flooding (resulting from overwhelmed drains following heavy down pours). The growing number of properties being constructed on floodplains entail that these statistics are set to worsen in future.

Floods are rarely out of the news in the United Kingdom, with the summer 2007 floods being the latest most significant flood event. When flooding occurs in an area populated by humans, it can cause substantial damage to property and threaten human life (Smith and Ward, 1998). In fact, between 1999 and 2008, there have been at least thirty-four deaths, which are directly related to flooding in the United Kingdom. In terms of damage to property, the average annual damage caused by floods in the UK is around £1,400million (Office of Science and Technology, 2004). Recently, the summer 2007 floods have been designated the most costly events extreme weather event in the UK, resulting into at least 180,000 claims amounting to around £3billion in insured damage (Pitt, 2008).

The insurance industry in the UK plays a major role in the recovery process of households following devastating floods that destroy property and cause significant disruption to people's lives. However, several reports have raised concerns regarding the services received by homeowners during insurance claims for the repair of flood damaged property. Some of the earliest reports on the subject highlighted service related concerns such as: lack of promptness in processing and settlement of claims; role, competence and impartiality of loss adjusters; communication; involvement of insurers in monitoring and supervising repairs; comprehensiveness of damage assessment; promptness of payments and general relations with the insured (Watkins and Welsh Consumer Council 1992; Warwickshire Trading Standards 1998).

More recently, Hendy (2005) also raised the following concerns regarding the services provided to homeowners during insurance claims in the aftermath of the Carlisle floods of 2005:

- Expectations – some homeowners thought they would be back within six months but that did not happen,
- No clear accountability – didn't know who to complain to,
- Irregular site attendance by workmen,
- Poor standards of workmanship,
- Neighbours with similar properties and policies having different repair works done to their properties,
- Homeowners feeling pressured to agree a settlement they were unhappy with,
- Inconsistence and failure to keep promises – "they kept moving the goal posts and breaking promises. They had no understanding of the stress caused."

A survey conducted by the Pitt Review (2008), in addition to praising the response by insurers overall, also highlighted factors why some homeowners were dissatisfied with the recovery process of insurance claims:

- Repair process taking too long,
- Difficulties in getting information,
- Taking too long to obtain advice, and
- Taking too long to deal with problems.

In order for service providers in flood damage insurance claims to offer services that will satisfy their customers (homeowners), thereby fostering customer loyalty, there is need for proper knowledge and understanding of homeowners' needs and satisfaction determinants.

It has been identified that knowledge of the satisfaction levels of occupiers whose properties have been flooded and subsequently repaired would be beneficial (Proverbs, Nicholas and Holt, 2000; Holt, et al., 2000a and 2000b). However, at present there is a lack of understanding of homeowners' needs, satisfaction determinants and levels of satisfaction in insurance claims for the reinstatement of their flood-damaged property both in terms of:

i. the performance of their insurance company; and

ii. the performance of other participants involved during the repair process (loss adjusters and contractors).

Such a void in the knowledge domain prompted concerns amongst some insurers that discrepancies in the level of service received by homeowners of two identical properties who are exposed to the same flood event but insured by different firms may be a source of feelings of dissatisfaction, potential conflict and even litigation. As a result, there have been calls for the establishment of a set industry-standardised flood damage assessment procedures. Such a move is likely to ensure that repair works carried out on the basis of instructions contained in damage assessment reports provided by different surveyors are comparable and meet some predetermined industry standards (Nicholas, et al., 2001).

One of the major functions of marketing in any business organisation is to ensure that its customers' needs are met, profitably. In order to accomplish this task, businesses ought to understand their customers' needs, a task that is admittedly not always simple to accomplish (Kotler, 1997). In fact, it has even been suggested that in today's competitive business world, it is no longer sufficient to merely satisfy customers by meeting their needs and expectations, because a 'satisfied' customer remains a customer so long as there is no better offer; whereas a 'delighted' customer (one whose expectations have been exceeded) is more than likely to remain loyal (Jobber, 1998; Gorst, 2000; Kotler and Armstrong, 2001).

Construction literature abounds with studies focusing on the needs (or requirements) of construction clients (Simon, 1942; Emmerson, 1962; Banwell, 1964; Latham, 1994; Egan, 1998; Chinyio, 1999; Kamara, et al., 2002). However, these investigations largely deal with clients' needs in the context of industrial and commercial construction projects. The restoration of flood-damaged domestic properties involves 'projects' and clients (insured homeowners) that have significantly different characteristics from those of ordinary construction projects. Some of the unique features of flood-damage reinstatement 'projects' are as follows:

- Recovery and restoration – the process involves returning the flood-damaged property to its pre-incident condition (BDMA, 2002).
- Flood restoration works, by nature, usually involve processes such as cleaning, drying, 'deodorising', sanitation, which are unique (BDMA, 2002).
- The size, usage, contents (Nicholas, et al., 2001).
- They involve flood claims, which can be very complex to handle (Crichton, 2002).
- The parties involved in flood restoration projects are typically the homeowner, insurer, flood restoration firm, loss adjuster, and sometimes loss assessors, whereas 'ordinary construction projects' typically assemble a team consisting of the client, designer, consultants and contractors (Samwinga and Proverbs, 2003).
- The 'clients' (insured homeowners) undergo a potentially traumatic experience often resulting in what Green, Parker and Emery (1983) refer to as 'threat anxiety' (expectancy of flooding), 'event anxiety' (during the flood event) and 'aftermath anxiety' (related to time taken to return to 'normal' living conditions).
- May involve loss of symbolic objects or irreplaceable assets of sentimental value, underinsurance on buildings and no insurance on contents (resulting in financial loss), which may exasperate the trauma experienced by homeowners (Green, *et al*., 1983).

Homeowners will evidently have different needs and requirements regarding the reinstatement of their flood damaged property from those of clients of commercial/industrial construction projects. Hence, it is important that the needs of homeowners be investigated as they form an integral part in customer satisfaction efforts.

Some closely related research around this subject has focused on:

- standardisation of assessment of flood damaged domestic properties (Proverbs, *et al*., 2000; Nicholas *et al*., 2001; Nicholas and Proverbs, 2002),
- the repair of flood damaged domestic properties (Proverbs and Soetanto, 2004), and
- the impact of flooding on the value of residential property (Lamond, 2008).

However, despite the aforementioned observations, there is still a limited knowledge on service quality and homeowners satisfaction with respect to the services they receive during insurance claims for the repair of flood-damaged domestic property. Focused research, would therefore be beneficial by providing a knowledge base upon which service providers (such as insurance companies, loss adjusters, flood restoration firms) can potentially draw, in their effort to deliver services that will meet (or exceed) homeowners' needs and expectations.

1.3 PURPOSE STATEMENT OF THE RESEARCH

The purpose of this two-phase sequential mixed methods study was to examine the satisfaction levels of homeowners and to determine the key predictors of homeowner satisfaction during insurance claims for the repair of flood-damaged domestic properties. This was done by first exploring the needs, expectations and the experience of insured homeowners in flood damage insurance claims. In-depth interviews were conducted with geographically dispersed homeowners in England who have previously experienced flood damage to their property. Themes that emerged from the qualitative data and from the literature review were then incorporated into the development of a survey instrument. Data collected from the survey was then used to investigate homeowners' satisfaction levels and to develop and validate a predictive model of key determinants of homeowners' satisfaction with respect to the repair of flood damaged domestic properties. The rationale of using both qualitative and quantitative methods was that a useful survey instrument for investigating homeowners' satisfaction in flood insurance claims could best be developed only after a preliminary qualitative exploration of the needs and expectations of homeowners. This is partly due to the unique nature of experiencing a flood event, which can only be fully understood by someone who has previously been flooded.

1.4 OVERALL OBJECTIVES OF THE RESEARCH

The research revolves around the needs and satisfaction levels of domestic property occupiers with the aim to critically examine homeowners' needs and to develop and validate a predictive model of key determinants of homeowners' satisfaction with respect to the repair of flood damaged domestic properties. In order to achieve the above aim, the following are the core objectives of the research:

i) To conduct a comprehensive literature review with the aims:

- To review the challenge of flood risk worldwide and specifically in the UK,
- To review the nature of flood events, their causes, and their impacts on households,
- To review the post-disaster recovery process within the context of insurance claims for domestic property,
- To review homeowners' needs and expectations with respect to flood damage reinstatement,
- To determine potential measures of service quality for insurance companies, loss adjusters and repairers, and
- To review potential determinants of homeowners' satisfaction with respect to services provided by insurers, loss adjusters and repairers.

ii) To investigate insurers' and repairers' perceptions of needs and factors that impact on the needs of homeowners during flood damage reinstatement;

iii) To investigate the actual needs of domestic property occupiers and compare them with those in (ii) above with a view to determine whether or not a gap exists;

iv) To investigate domestic properties occupiers' perceived satisfaction levels and determinants of satisfaction with respect to service quality during flood damage reinstatement;

v) To demystify the insurance flood damage claim chain, demonstrating the interrelationships and interactions of parties involved, together with the factors that impact upon their performance and the homeowner experience;

vi) To develop a mathematical model confirming the key determinants of homeowners' satisfaction by use of multiple regression analysis; and

vii) To validate the ensuing model(s) by testing their application to a hold-out sample.

1.5 OUTLINE METHODOLOGY

A mixed methods methodological approach was employed in this study, combining a positivist (quantitative) paradigm with elements of an interpretivist (qualitative) one. Since the research employed a mixed methods approach, the exploratory phase of the study used a qualitative approach (refer to Chapter 5) to investigate a number of research questions (Creswell, 2003) while the quantitative study (refer to Chapter 6 and Chapter 7) was aimed at testing a set of hypotheses. The chosen research methods included a literature survey, with the primary data collected through semi-structured interviews and questionnaire surveys (Refer to Chapter 4 of this thesis for a more detailed discussion of the methodology).

The research commenced with a comprehensive literature review of customer needs, satisfaction and service quality as well as flooding, flood damage and the repair of flood-damaged property. Due to the dearth of literature on homeowner satisfaction, exploratory in-depth semi-structured interviews were conducted to inform the development of the questionnaire survey, the main primary data collection instrument.

The data analysis was conducted in three stages, the first being analysis of the interview data using content analysis, aided by NVivo, a computer software for qualitative data analysis. The data obtained through the questionnaire survey was analysed in two stages using SPSS, a software package for quantitative data analysis. Preliminary analyses were conducted using descriptive statistics such as frequencies, means and standard deviations. In addition, some inferential statistics were employed during this preliminary phase, including the chi-square test of independence, independent samples t-test and one-way between groups Analysis of Variance (ANOVA). The aim of the preliminary analysis was to provide useful insights into the data as well as gain an overall understanding of the individuals composing the data set used for the subsequent hypotheses testing and model development. The second stage of the quantitative data analysis involved more detailed analysis using factor analysis, ANOVA, correlation analysis, and modelling of homeowner satisfaction using multiple regression analysis. The developed models were subsequently tested using a hold-out sample.

A flow chart summarising the research process and methodology is presented in Figure 1.1, while a more detailed discussion of methodological issues and data analysis are presented in subsequent chapters.

1.6 SIGNIFICANCE OF THE RESEARCH

Customers' experience and their associated evaluation of the offerings of businesses of are very essential constructs. As a result, customer satisfaction is often a major preoccupation of businesses operating in a highly competitive environment. This research was aimed at providing an understanding of the requirements of domestic property occupiers, whose properties have been damaged by floods. In addition, the study also evaluates homeowners' perceptions of the quality of services offered by insurance companies, loss adjusters and repair contractors during insurance claims for the reinstatement of flood-damaged domestic properties.

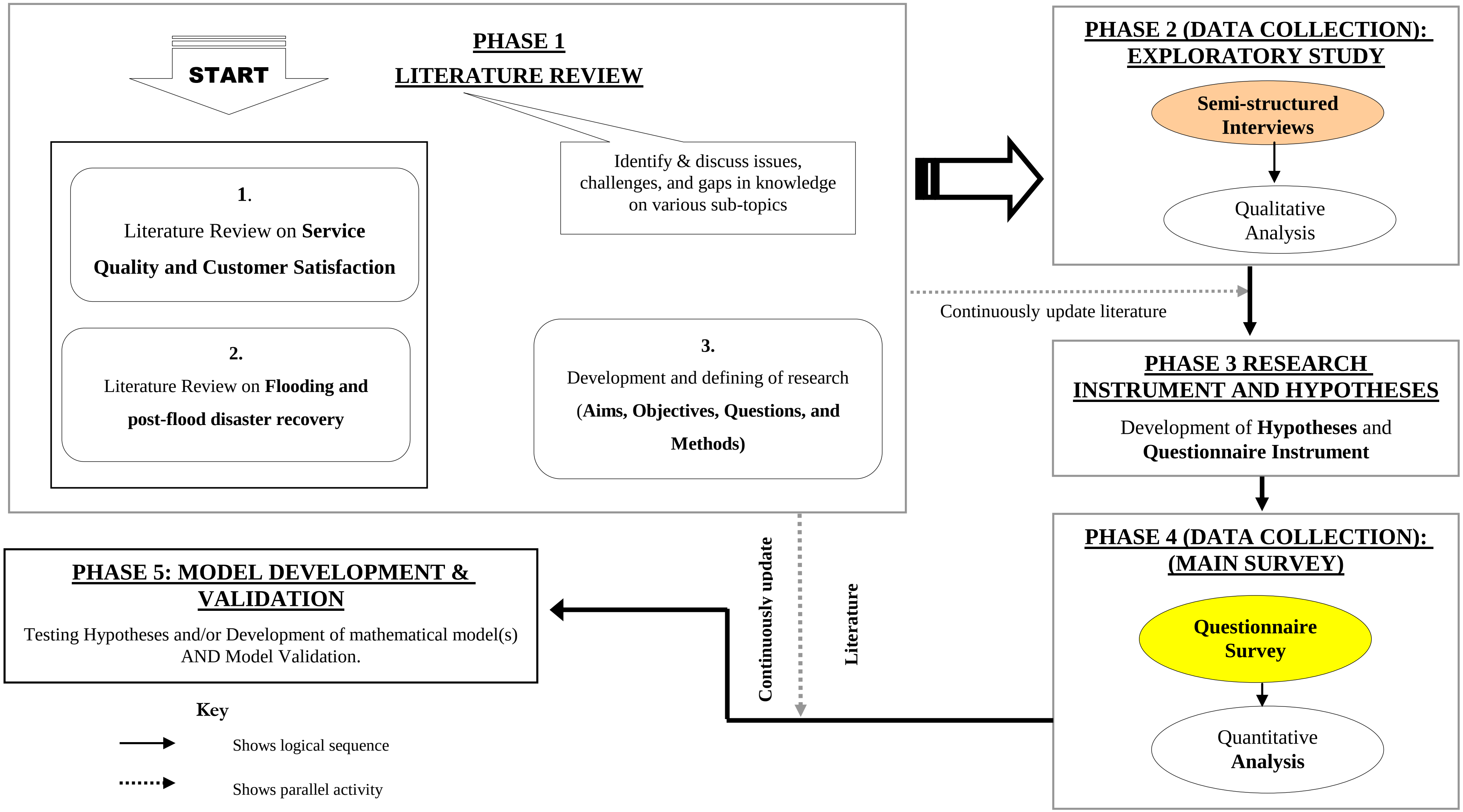

Figure 1.1 A flow chart of the research process and methodology

The results of the study hold potential benefits to insurers, damage loss adjusters, contractors and insured homeowners, whilst also making a theoretical contribution to this area that has limited previous research. Service providers, such as insurers and damage management specialists would be interested in the determinants of customer satisfaction in the process of flood damage reinstatement to domestic properties. When the findings of the research project are embraced, the newly gained knowledge should enable service providers to evaluate their customers' requirements more accurately and thereby be able to meet (or exceed) their customers' expectations.

The results of this research also provide a theoretical contribution to the knowledge domain by addressing the gaps that existed in knowledge of the antecedents to homeowner satisfaction during flood damage repair works.

1.7 DELIMITATIONS OF THE RESEARCH

This section sets out the scope of the research project which was significantly influenced by the literature review and initial exploratory phases. Scotland was excluded from the data collection for the study for practical reasons of access to participants.

The flood victims of interest in the study were homeowners living in owner-occupied properties as opposed to those living in rented accommodation. Only homeowners with appropriate insurance cover against flood damage were of interest in the survey.

In addition, homeowner satisfaction was only measured for the services they receive from three service providers in the flood damage claim chain, namely: the insurance company, loss adjusters and the contractor (repairer). These three principal service providers were chosen due to the pivotal roles they play during the reinstatement process. Other services such as those provided by restoration companies, i.e. cleaning and drying companies are not considered separately or individually.

1.8 ORGANISATION OF THE THESIS

This thesis is organised in several chapters that describe the work undertaken during the research process, as described below:

Chapter 1 – the current chapter is an introduction to the entire thesis and outlines the rationale of the work, the objectives and the scope of the research. An outline methodology is also presented together with a summary of how the rest of the thesis is organised.

Chapter 2 – this chapter is a literature review of the phenomenon of flooding and the process of post-incident recovery (within the context of insurance claims for domestic property). The challenge of floods is presented within the worldwide context of disasters before discussing the nature of floods and their causes. In addition, the extent of flood risk in the UK is highlighted, including flood risk management and responses. This is followed by a review of the ‘human side’ of flooding. The repair and restoration of insured domestic properties is then discussed and illustrated using a schematic representation. It is in the context of flood-damage repair to domestic properties that the service quality and satisfaction are considered.

Chapter 3 – this is the second of two literature review chapters (Chapters 2-3), which have been conveniently organised according to themes. Chapter 3 focuses on the concepts of customers and their needs, how needs are classified, and an examination of potential homeowners’ needs in the reinstatement of flood damaged property. In addition, the chapter reviews the two interrelated concepts of satisfaction and service quality, their conceptualisation, the role of expectations in performance evaluation, how satisfaction and service quality are measured and how they were measured in the study.

Chapter 4 – this chapter describes the methodological issues and overall mixed methods approach (qualitative and quantitative) used in this study. It further outlines the process and issues relating to each of the two phases of the data collection (interviews and questionnaire). The rationale behind the choice and use of interviews, access to interviewees, the research questions forming the basis of the interview questions, and the interview methods employed are all discussed.

Chapter 5 – Chapter 5 deals with the exploratory phase of the primary data collection which employed semi-structured interviews. The data collection process, including transcription of the interviews is discussed. The chapter further covers how the data was collected and its subsequent analysis by content analysis with the aid of NUD*IST Vivo

(NVivo) computerised software for qualitative data analysis. A discussion of the findings of the in-depth research interviews on primarily the needs and expectations of homeowners, satisfaction and dissatisfaction determinants in flood damage reinstatement claims in the UK is also included.

Chapter 6 – this chapter provides preliminary data collection and analysis of the second phase of the primary data collection which employed a quantitative approach. The chapter outlines how the data was prepared for analysis, including some basic issues of data compliance with basic assumptions associated with most statistical techniques. In addition, the some preliminary analyses using both descriptive statistical techniques as well as some preliminary inferential statistical techniques are put forward in the chapter.

Chapter 7 – this chapter is dedicated to testing of the hypotheses put forward in Chapter 4 as well as the development and validation of the resultant models. Minimal discussion of the results is undertaken here; instead, the detailed discussion is conducted in the next chapter of the thesis.

Chapter 8 – this chapter is primarily a discussion of the research findings with the main objective of providing a link between the literature review (theory) and the research findings. The implications of the findings are also explored together with recommendations for further research as well as practice.

Chapter 9 – this chapter outlines the conclusions made by the study by reviewing the objectives of the study and subsequent findings. In addition, the chapter presents the limitations of the research and some recommendations for further study.

1.9 SUMMARY

Flooding is a topical issue in the United Kingdom as well as in many parts of the world. The continued inundation of domestic properties as a result of extreme weather events, and the subsequent services homeowners receive from their insurance companies has raised issues regarding the levels of service quality. This introductory chapter has provided a rationale for the research, an outline methodology, the purpose and objectives of the research, as well as an outline of how the chapters of the thesis are organised.

2.1 INTRODUCTION

‘Floods’ or ‘flooding’ are terms that are used to refer to a wide range of phenomena associated with extreme weather events. This chapter will discuss a range of issues associated with flooding, commencing with a contextual positioning of flooding within the wider context of disasters worldwide. The nature of flooding, types and sources of floods are also explored. The subject of climate change and its impact on flood risk are unavoidable in such a study. The impact of flooding on human society, both the tangible damage to infrastructure and associated loss of life as well as but also in terms of the less obvious human aspects are discussed. The chapter concludes by addressing the pertinent issues relating to the various parties and process of repairing flood-damaged domestic property and the associated insured homeowner experience in flood claims.

2.2 A WORLD OF DISASTERS

There are several different forms of events which pose risk to humans and their settlements and often result in disasters. The Belgian WHO collaborating Centre for Research on Epidemiology of Disasters (CRED) regularly publishes statistics on worldwide disasters in association with the secretariat of the International Strategy for Disaster Reduction (UN/ISDR) in Geneva. Data is collected on a range of disasters that affect societies around the world including hydro-meteorological disasters (drought, extreme temperature, flood, slide, wild fire, and wind storm), earthquake and tsunami, volcano and insect infestation. A review of their data shows just how prevalent disasters are and the enormity of their impacts on mankind.

But what is a disaster and when is an event serious enough to be classed as a disaster? The UN/ISDR (2003) defines the term disaster as:

> *A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.*

Disasters result from a combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk (UN/ISDR, 2003). The above definition illustrates that disasters are synonymous with a catastrophic event which overwhelms a community and its resources, thereby rendering it incapable of coping.

The 1990s were declared to be the decade for "Natural disaster reduction" with emphasis on ensuring:

> *The development of disaster-resistant infrastructures and institutions in the context of disaster-sensitive investment programmes.* (Mintzer, 1992: 142)

In spite of this dedication to disaster reduction and the various strides that may have been made over the last decade, disasters are inevitable and their consequences still seem to be as significant (if not more) as before. However, Mitchell and Ericksen (1992) argue that:

> *Humans are not simply pawns of nature; we modify natural processes – sometimes deliberately, sometimes inadvertently. Human interactions with extreme weather events determine whether floods, droughts and other phenomenon merely pose hazards or lead to major loses. We have the capacity to avoid, prevent or reduce losses by engaging in protective action.* (Mintzer, 1992: 142)

Despite the inevitability of 'extreme events', not every hazard should result in a disaster. Major losses, economic, human, environmental or otherwise, may in some cases be preventable or at least reduced by sensible reduction measures.

2.2.1 Flood disasters in context

Figure 2.1 shows worldwide distribution of disasters by 'type' between the years 1991 to 2005. These figures are very consistent with a much longer trend between 1970 and 2005 in terms of proportion accounted for by each disaster type. According to these CRED statistics, floods account for a significant proportion of worldwide disasters. At over thirty percent of all worldwide disasters between 1991 and 2005, flooding is the main disaster affecting the world's population today (CRED, 2008).

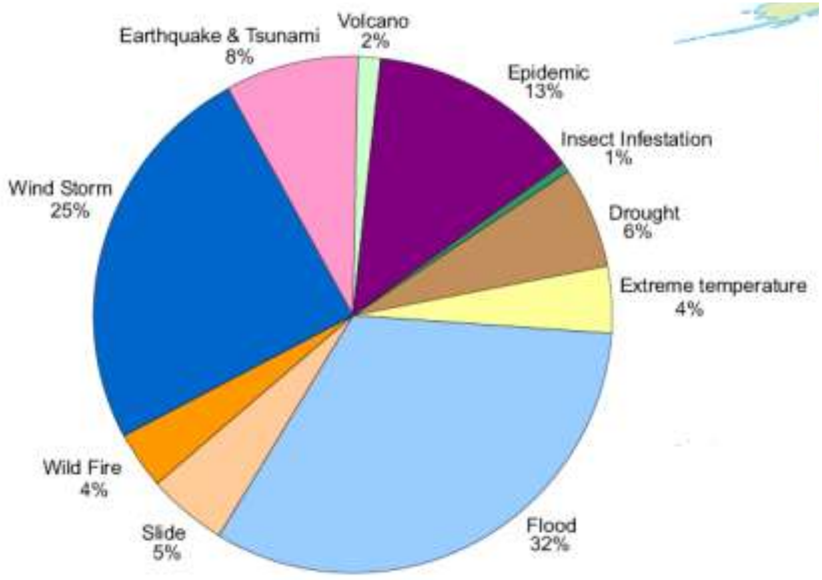

Figure 2.1 World distribution of disasters by type (1991-2005)

Source: CRED (2006)

More recent data provides further evidence regarding the significance of flood disasters as a menace to communities around the world. Figure 2.2 shows a list of disasters that plagued humanity worldwide in the year 2007, ranked according to the number of lives lost as a result. Over forty percent of all deaths caused by the world's top 10 disasters in 2007 were flood-related. In addition, 2007 saw a significant increase in overall incidence of flood disasters worldwide compared with the average of the previous seven years[1].

The associated human impact of flood disasters is quite significant too. Out of the 197million people affected by disasters worldwide in the year 2007, 167million of those were affected by a single disaster type – floods! It has been observed that the majority of the victims of natural disasters were in Asia. In fact, eight out of 10 of the countries with

[1] Between 2000 and 2006, there was an average of 172 flood disasters worldwide whereas in 2007 alone the number rose to 206 (CRED, 2008).

the highest number of disaster deaths in 2007 were in Asia. This has led some to conclude that the predictions of the IPCC are beginning to be borne out, especially in Asia and parts of Africa which are already beginning to suffer from more severe and frequent floods (CRED, 2008).

Top 10

Natural disasters by number of deaths - 2007

Cyclone Sidr, November	Bangladesh	4 234
Flood, July-August	Bangladesh	1 110
Flood, July - September	India	1 103
Flood, August	Korea, Dem P Rep	610
Flood, June-July	China, P Rep	535
Earthquake, August	Peru	519
Heat Wave, July	Hungary	500
Cyclone Yemyin, June	Pakistan	242
Flood and landslides, June	Pakistan	230
Flood, July	India	225

Figure 2.2 Top 10 Natural disasters by number of deaths - 2007

Source: CRED (2008)

Economic costs associated with disasters worldwide have also been very significant and even developed nations are feeling the strain of it. In 2007 alone, it is estimated that disaster losses totalled a massive US$62.5billion. Key contributing factors were mainly events such as Japan's earthquake (US$12.5billion), Europe's windstorm (US$10billion), and the UK's summer floods[2] (US$8billion) (CRED, 2008).

2.3 FLOODING: UNDERSTANDING THE PHYSICAL EVENTS

Like many other forms of disasters, flooding is not a new phenomenon. It is believed that the first flood was probably the well known biblical account of Noah's flood (Genesis 6:1 – 9:17). Not everyone, of course, accepts this account as a historical fact:

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[2] The UK summer floods are briefly discussed under section 2.4.1 of this thesis.

“Whether Noah’s flood was an historical fact, or merely the stuff of myth and legends, is unclear” (Ward and Smith, 1998: 7).

By definition, a flood generally involves the inundation or overflow of water to cover land that is not normally submerged (Ward, 1978, in Simon and Ward, 1998). As a natural process, flooding from rivers often offers great benefits to local economies and ecology. Smith and Ward (1998) refer to this form of flooding as "normal flooding" (i.e. slow seasonal rise and fall of the river hydrograph). Although, flooding is a natural phenomenon and is inevitable, it can cause substantial damage to property and sometimes loss of human life and livestock, when it occurs in areas populated by humans (Smith and Ward, 1998; MET Office, 2003; Office of the Deputy Prime Minister, 2003). This view is supported by Mitchell and Ericksen (1992) who argue that extreme weather events don’t always have to translate into disasters. It is only when these events occur in such a way that they interact with human societies, that there is then a potential for them turning into a disaster.

Flooding occurs as a result of one or a combination of events such as rainfall filling rivers, streams and ditches, coastal storms resulting in overtopping and breaching of coastal flood defences, blocked or overloaded drainage ditches, drains and sewers, heavy rain resulting in run-off flowing overland, or rain soaking into the ground thereby raising ground water levels (Office of the Deputy Prime Minister, 2003).

2.3.1 Types, sources and causes of floods

Floods generally occur as a result of one or a combination of events (Office of the Deputy Prime Minister, 2003) including:

- Rainfall filling rivers, streams and ditches beyond their flow capacity so that floodwater overflow river banks and flood defences onto floodplains.

- Coastal storms resulting in overtopping and breaching of coastal flood defences due to storm surge and wave action.

- Blocked or overloaded drainage ditches, drains and sewers overflowing across roads, gardens and into property.

- Overloaded sewers sometimes flowing back into property.
- Heavy rain resulting in run-off flowing overland down hills and slopes.
- Rain soaking into the ground thereby raising ground water levels and causing flooding.

There are several different sources of flooding some of which are rivers and streams, the sea, groundwater, overland flow (especially over tarmac and other hard surfaces), blocked or overloaded drains and sewers, and broken water mains (Office of the Deputy Prime Minister, 2003).

2.3.1.1 Rivers and streams

River flooding usually occurs when excessive rainfall (melting snow or a combination of high river levels and high tides) overwhelms the land's capability to drain the water effectively. The situation can be worsened by surface soils that are already saturated (owing to wet weather) and when river channels become blocked by debris, thereby resulting in greater run-off rates and higher flooding levels (POST, 2001; Office of the Deputy Prime Minister, 2003).

2.3.1.2 The sea

High tides, storm surges, waves overtopping or breaching sea defences, or a combination of these factors can also result in flooding from the sea (Office of the Deputy Prime Minister, 2003) in which case salt water may be contained in the floodwaters.

2.3.1.3 Groundwater flooding

As with river floods, groundwater flooding is often precipitated by heavy rainfall and is most likely to occur in areas of chalk, limestone or other aquifers. This means that depending on the local geology, groundwater flooding can take a long time to recede and thereby resulting in properties being submerged underwater even many months after the end of heavy rains (Office of the Deputy Prime Minister, 2003).

2.3.1.4 Overland flow

As with river floods, overland flows can be caused by heavy rainfall falling on saturated ground, where groundwater levels are already high, or on paved areas, which lack adequate drainage. As a result, properties located in areas where floodwater can accumulate are at risk of being flooded by overland flows (Office of the Deputy Prime Minister, 2003).

2.3.1.5 Blocked or overloaded drainage systems

Flash flooding (localised) occurs in the event of heavy rainfall coupled with blocked or overloaded drainage systems like drainage ditches & culverts and buried drains and sewers (or even blocked or overloaded roof drainage systems). Flooding of this nature is very unpredictable and usually occurs in unexpected locations depending on factors such as location and intensity of rainfall (Office of the Deputy Prime Minister, 2003). Due to the nature of this type of flooding, the floodwater may convey contaminants such as sewage, which in some cases may even backflow into buildings.

2.3.1.6 Broken water mains

Although flooding is often thought of in terms of river flooding, domestic properties, especially in urban areas in the UK sometimes become flooded as a result of broken water mains. Such cases do not usually get as much publicity as the flooding caused by rivers, streams and the sea partly due to the localised nature of damage caused and the number of people affected. In addition, burst water mains usually flood basements, and do not normally lead to property being flooded above ground level (Office of the Deputy Prime Minister, 2003).

2.3.2 Characteristics of floods

Several factors determine whether or not individual properties will be affected by flooding and to what extent. These ‘flood characteristics’ are outlined in Table 2.1 below, with some of the key ones further discussed thereafter.

Table 2.1 Factors that determine the extent of flood damage to properties

		Green *et al.* (1983)	Soetanto, *et al.* (2002)	Office of the Deputy Prime Minister (2003)	Proverbs and Soetanto (2004)	Lancaster *et al.* (2004)
a.	Depth of floodwater	●	●	●	●	●
b.	Flood water quality (contaminant content)	●	●		●	●
c.	Flood duration	●	●		●	●
d.	Speed (velocity) of floodwater	●	●	●	●	●
e.	Particular level and position of building			●		

2.3.2.1 <u>Depth of floodwater</u>

Flood depth and exposure of the property to flood waters has a significant effect on the extent of flood damage. If the depth of flood water is below the ground floor, the damage sustained is usually to the basement, below ground electrical sockets, carpets, fittings and possessions. The main building, in such cases, suffers minimal damage. However, the floors may deteriorate if the water is in the property for a prolonged period or if the property does not receive proper drying treatment (Garvin, *et al.*, 2005).

When the extent of flood water depth is above the ground floors, extensive damage can occur to internal finishes, floors and walls, resulting in damp problems, destroyed plaster, plasterboard, services, carpets, kitchen appliances, furniture, electrical goods and belongings (Garvin, *et al.*, 2005). Where homeowners live in a property with a second floor, the general advice is to try to mitigate damage to building contents by moving them upstairs, for instance. This may not be practical for homeowners with disabilities or illnesses and who have no helpers at the time of the flood event.

2.3.2.2 Contaminant content in floodwater

Water from coastal floods will contain saltwater which could result in corrosion of metal components and materials, while flood water containing sewage will require the property to be properly cleaned and sanitised before any repair work can commence (Garvin, *et al.*, 2005). In cases of flooding from the sea, saltwater can lead to corrosion of metallic fittings, including metal ducting and switch boxes, and steel reinforcement within reinforced concrete. The insurance industry has estimated that saltwater flooding can increase flood damage repair costs by around 10% (Office of the Deputy Prime Minister, 2003).

In addition, floodwater can be contaminated with sewage from blocked drains and chemicals from garages or commercial premises. Such contamination can add to the cost of cleaning and disinfecting buildings that have been flooded. Contaminated floodwater may also create some risks to health. Protective clothing should therefore be worn during the clean-up operation and other hygiene precautions should be taken. The Environment Agency's Floodline website (www.environment agency.gov.uk/flood) has some advice on safety measures required to deal with floodwater during the repair of flood-damaged buildings.

Flooding can also damage property outside the building, such as cars, garages, sheds, garden furniture, gardening equipment and garden fences. Patio paving may need to be re-laid, and garden ponds cleaned out and restocked. Rats and other wildlife may also take shelter in property in or near flooded areas. While some furniture, fittings and personal possessions may dry out after exposure to floodwater they may be permanently stained (Office of the Deputy Prime Minister, 2003).

2.3.2.3 Flood duration

Flood duration is also another factor that significantly affects the extent of flood damage and consequently the extent of cleaning and repair required in the aftermath of a flooding to a property (Garvin, *et al.*, 2005). However, it is not just the duration of the floods but also the nature and contents of the floodwater as discussed below.

2.3.2.4 Whether anticipated or not

Whether or not a flood event is expected, may in some cases, have a significant impact on the extent of damage, especially to the contents of a property. With a timely warning, homeowners can take steps to mitigate the damage that may caused by the impending flood hazard. The most common immediate responses to a flood warning tend to be removal of portable possessions form the ground floor, deploying sand bags or flood guards, moving vehicles and vacating properties (Werrity *et al*, 2007).

Unfortunately, not all households at risk of flooding do get flood warning messages of an impending flood event. In a survey of Scottish households, Werrity *et al.* (2007) found that only 42% of respondents received some kind of flood warning, out of which only slightly over half (51%) of households received some form of official warning (telephone, knock on the door, loud hailer or automatic telephone message). By far the single most common method of flood warning was from neighbours (32%). The Environment Agency recently admitted that over 35,000 (64%) of homes and businesses that were flooded in the summer of 2007 had no specific flood warning service provided (Environment Agency, 2007). This was a significant number of households and businesses and it raises questions of how adequately prepared the country is for major flood incidents such as this.

2.4 FLOOD RISK IN THE UK

Flood risk for a property is generally understood as a combination of the likelihood of a flood occurring and the consequences of the flood in terms of damage caused or impact (Office of the Deputy Prime Minister, 2003). Therefore, flood risk is as much about the probability of a property being flooded as it is about the severity of flood event should it happen. The consequences, referred to in the above definition of flood risk, relate to the impact on people, and the natural and built environments (Office of the Deputy Prime Minister, 2003).

Over 5% of the people in England live lower than 5 metres above sea level, including large parts of major cities such as York and London. It has also been suggested that about 7% of the country is likely to flood at least once every 100 years from rivers. In addition, approximately 30% of the coastline is developed and around 1.5% of the country is at risk from coastal flooding (Office of the Deputy Prime Minister, 2003).

Nearly two million homes in the whole of the UK are in areas, at risk of river or coastal flooding, although much of it is managed adequately. An additional eighty thousand properties are estimated to be "at risk in towns and cities from flooding caused by heavy downpours that overwhelm urban drains – so-called 'intra-urban' flooding" (Office of Science and Technology, 2004). Sewers and drainage systems play a significant role in the problem of flooding in the UK. It is estimated that around 6,000 properties are flooded internally each year by sewage (ABI, 2007).

These figures could rise further if climate change results in more frequent extreme weather events as predicted. In addition, there are continuous reports of more properties being constructed on flood plains. For instance, the Countryside Alliance recently reported that in the Midlands alone, 3,655 new homes were earmarked to be built on flood risk areas (Naqvi, 2008). The Association of British Insurers (ABI) has since spoken out regarding flood risk homes, pointing out that domestic property could be "uninsurable and uninhabitable" unless stricter planning controls are introduced. The ABI reported that a third of the millions of new homes the government wants to build by 2020 could end up being built on flood plains adding that thirteen (13) major developments had already been passed, despite Environment Agency advice on flood risk in the past year. However, the government insists that all were approved before it brought in tough new rules.

Table 2.2 shows extent of flood risk in the UK, the average annual cost of damage caused by flooding as well as the 2003-04 levels of spending on flood and coastal defences.

Table 2.2 Flood Risk in the UK

Description	No. of Properties at risk	Average annual damage (£ millions)	Flood management costs 2003-04 (£ millions)
River and coastal flooding			
England and Wales	1,740,000	1,040	439
Scotland	180,000	32 (fluvial only)	14
Northern Ireland	45,000	16 (fluvial only)	11
Intra-urban flooding			
All of UK	80,000	270	320
Total	**2,045,000**	**1,400**	**800**
Source: Office of Science and Technology (2004)			

Although the average annual damage of floods is only £1,400million, recent events such as the autumn 2000 and summer 2007 floods[3] demonstrate how this can be significantly exceeded by major events.

Some areas are more prone to flooding than others, especially river floodplains (Environment Agency 2003); however, it is generally agreed that human activity has increased the risk of flooding from rivers and streams in many areas in the UK through factors such as a reduction of the natural capacity of floodplains due to development consequently leading to an increased rate of surface water run-off (Office of the Deputy Prime Minister, 2003). Calls for a total ban on building on flood plains are seen by some as unrealistic; instead planning controls should be more stringent (Pitt, 2008).

2.4.1 Recent flood events

In the UK for instance, there have been many significant floods. Some of the most destructive floods were in 1947, 1953 (North Sea), Easter 1998 and Autumn 2000

[3] See Table 2.3 for a summary of details of these two flood events

floods, Boscastle 2004, Carlisle 2005 and Summer floods June 2007 (refer to Table 2.3). Flooding has become even more topical in the UK in the wake of the recent events.

Table 2.3 Some Key UK Flood events

Flood Event	**Features of the various Events**
The 1947 Floods (March)	• Over 100,000 properties were flooded, • Affected thirty out of forty English counties over a two weeks period, • Large areas of Eton were underwater, • Nearly a third of Windsor's population was affected, • Nearly 700,000 acres of land were covered by flood water, • Thousands of people had to be evacuated, • Many roads were closed. • The floods peaked after a week and took another 10 days to subside completely, leaving immediate • Caused damage estimated at £12m (£300m at current values), • The final cost, including devastated farmland, was between £3bn and £4.5bn. (POST, 2001, Wainwright, 2007)
1953 Floods	• Claimed 300 lives, • Over 20 000 homes were flooded, • Over 30 000 people were evacuated from their homes, • Caused damage worth approx. £50 million (at current prices), • Area of damage: over 1000 miles of coastline damaged, • Sea defences and sea walls breached in over 1000 places, • Power stations, gasworks, sewage works and water supplies were disrupted, • Saltwater contaminated the water supply in Hunstanton, • 100 miles of the road network was temporarily impassable, • 200 miles of railway network was out of action, • Over 40 000 head of livestock were lost, • Over 150 000 acres of farmland were inundated, and were not usable for several years, • Jobs were affected as over 200 industrial premises were damaged. (Geography Pages, 2003)
The Easter 1998 floods	• Claimed 5 lives, • The floods lasted 6 days and affected an area from Worcestershire to Cambridgeshire, • Over 1,500 people were evacuated, • Caused damage worth approx. £500-700million (Insurance claims). (POST, 2001)
Autumn 2000 Floods	• Autumn 2000 was the wettest in the UK since records began (over 270 years ago), • Rainfall in October was four times the average for the month, • Over 10,000 properties were flooded in England and Wales, • Nearly 300,000 properties were at risk of flooding, • Caused damage worth approx. £1 billion (Insurance claims), • Widespread disruption to road and rail services occurred.

Flood Event	**Features of the various Events**
Boscastle 2004	• Flash floods occurred on 16 August 2004, • Claimed no lives, • Seven helicopters rescued about 100 people from rooftops, cars and trees, • 100 homes and businesses were flooded, • Damaged about 115 vehicles, • Roads, bridges, sewers and other infrastructure were badly damaged, • Insured losses of about £15 million (including business interruption). Environment Agency (no date)
Carlisle 2005	• CARLISLE, WEEKEND OF 8 – 9 JANUARY 2005: • Over 20 cm of rain fell in two days, • The river over-topped all 8 km (5 miles) of the town’s flood defences, • Claimed the lives of two elderly women, • 150 people were admitted to hospital, • Thousands of people evacuated, • 1,700 homes and 300 businesses were flooded, • Around 1,500 cars were damaged, including all of Carlisle’s 65 buses, • Insured losses to the tune of £240million. ABI (2005)
Summer 2007	• Claimed 14 lives, • Over 49,000 homes and 7,000 business flooded, • Insured losses over £3bn, eight times the combined total of the Carlisle (2005) and Boscastle (2004) floods, • Other costs around £1bn, • The wettest May to July period since records begun (1766), • Over 144,000 homes (Gloucestershire) lost water supplies for over a week, • Serious damage to nearly 300 schools in Hull, • Roads closed (M1, M4, M5, M18, M40 and M50), • Several railway stations and lines closed, • Ten times more homes and businesses than the 1998 floods; five times more homes than the autumn 2000 floods), • Other impacts - closure of schools, companies unable to function (normally), families leaving their homes and moving into temporary accommodation, disruption to transport systems. (ABI, 2007).

Although, a substantial programme of building flood defences has been embarked on, partly in response to the earlier flood events (POST 2001), more recent floods such as the Easter 1998 and Autumn 2000, Boscastle 2004, Carlisle 2005 and the summer floods 2007 floods show just how that the risk of flooding in the UK still remains significant. The use of man-made flood defences protect most areas from river flooding, the defences only reduce the likelihood of flooding and cannot possibly eliminate risk altogether. This is partly because flood defences are designed to withstand specific flood heights, which can be breached or overtopped when more extreme events occur (Office of the Deputy Prime Minister, 2003). In addition, there is what Crichton (2005) refers to as the 'flash flood' problem, which is not necessarily associated with flood plains or river courses.

2.4.2 Climate Change and Flood Risk

"The earth is only habitable because of the greenhouse effect. Without it, its average temperature would be around minus 18^{o}C" (POST, 2007). It is this 'greenhouse' characteristic of the atmosphere that acts as a blanket over the earth's surface leading to it being warmer; otherwise, the Earth's surface would be 20 to 30°C colder and a lot less hospitable to life (Royal Society, 2002).

Scientists argue that an increase in greenhouse gases intensifies the greenhouse effect, thereby warming the earth's climate. A good working definition of climate change is one adopted by the United Nations Intergovernmental Panel on Climate Change (IPCC), which posits that climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity (IPCC, 2007).

In their summary of the key policy-relevant findings, the Fourth Assessment of Working Group II of the IPCC concludes that the observed evidence from all continents and most oceans shows that *many natural systems are being affected by regional climate changes, particularly temperature increases* (IPCC, 2007). The IPCC projects that the impact of climate change and associated rising sea level will expose societies, industry and settlement, particularly those in coastal and river plains to increased vulnerability due to increased risks such as coastal erosion. Additionally, the IPCC emphasise that "many millions more people are projected to be flooded every year due to sea-level rise by the 2080s"; however, the greatest vulnerability lies in communities and activities located in floodplains (coastal or river) (IPCC, 2007: 12).

Although there is a great degree of certainty that an increase in greenhouse gases will result in warming the earth's climate, there is some uncertainty about how much warming will occur (POST, 2007). The IPCC further describe the impacts of climate and the potential challenges in adapting to the same:

Nearly all European regions are anticipated to be negatively affected by some future impacts of climate change, and these will pose challenges to many economic sectors. Climate change is expected to magnify regional differences in Europe's natural resources and assets. Negative impacts will include increased risk of inland flash floods, and more frequent coastal flooding and increased erosion (due to storminess and sea-level rise). The great majority of organisms and ecosystems will have difficulty adapting to climate change. Mountainous areas will face glacier retreat, reduced snow cover and winter tourism, and extensive species losses (in some areas up to 60% under high emission scenarios by 2080) (IPCC, 2007: 14).

Whenever extreme weather events occur, it is tempting to point to them as evidence of climate change effects. Indeed, the immediate reaction to the recent Summer 2007 flood event was that it was linked to climate change. However, the new report by the Centre for Ecology and Hydrology has dispelled this notion. The report acknowledges that the 2007 summer floods were remarkable in extent and severity but that they were very much a singular episode adding that:

A number of major flood episodes in the early years of the 21st century have fuelled speculation that flood risk is increasing due to global warming. By their nature, however, any cluster of extreme hydrological events cannot readily be linked directly to climate change (Marsh and Hannaford, 2007: 4).

The Centre for Ecology and Hydrology report has blamed the growth of urban centres especially development of properties on flood plains for the summer 2007 floods rather than climate change.

Changes in vulnerability to flooding during the 20th century cannot be attributed primarily to climatic variability or change. Continuing floodplain development and urban growth has contributed to the rapidly rising economic costs of notable flood events (Marsh and Hannaford, 2007: 26).

Mitigation of environmental change by reducing the human effects on the global environment and climate (through reducing greenhouse gas emissions, for instance) as well as adapting societies to the likely changes in the environment are increasingly becoming the focus of a holistic, simultaneous and more strategic approach to tackling natural disasters (Hunt, 2002).

2.5 INSURANCE ISSUES

Insurance is primarily a method for redistributing losses; in the context of flood cover, the insured join forces in advance, with a financial institution to spread the financial loss caused by floods over a number of years by paying an annual premium (Smith and Ward 1998). In this manner, insurance (flood cover) enables householders and businesses to minimise the financial cost of damage from flooding (ABI 2002).

Homeowners in the UK have for a long time now routinely benefited from widely available insurance cover for flood damage, as a standard feature of home insurance, a unique arrangement not common around the world. However, with the increasing number of properties at significant risk of flooding and the increasing costs associated with recent flood events, it is clear insurers are raising concerns over the government's level of investment in flood protection and hazard reduction. Clark *et al*. (2002: 34) emphasise a basic tenet in risk management that "insuring a risk that is certain goes against the fundamental principles of insurance." They also predict that "whatever the future of the UK insurance industry, it can safely be concluded that it cannot and will not continue to carry the universal burden of flood losses alone" (Clark *et al*., 2002: 38).

The prediction by Clark *et al*. (2002) appears to be showing signs of becoming a reality. A year on after the summer floods of 2007, the ABI published a report stating that its members:

> *[...] cannot commit to continue to provide cover to the 517,000 homes in England, that the Environment Agency predicts are at significant flood risk, unless the Government announces plans for them to be adequately defended.*
> *ABI (2008: 13).*

Even though the ABI welcomed a recent increase in government spending on flood defences to £800m for the period 2008-2011 (ABI, 2007), there are still concerns that more could be done to protect existing properties at significant risk of flooding as well as ensuring further development on flood plains is carefully managed.

> *Insurers want to continue to make flood insurance as widely available and as competitively priced as possible – but this will not be possible unless the Government steps up its efforts to reduce flood risk. ABI (2008: 12).*

The head of the Environment Agency, Baroness Young recently called on the ABI to encourage its members to refuse to insure properties that are built on flood plains against the Environment Agency official advice (Jowitt, 2007). Such a move was proposed to try and cut down the number of developments proceeding on flood plains. The view has been reinforced in the ABI's latest report reflecting on the summer 2007 floods:

> *And we need planning controls to be more strictly enforced to avoid properties being built in high flood-risk areas. If not, many homes face becoming uninsurable, unsalable and uninhabitable. ABI (2008: 13).*

The Pitt review (2008) also dealt with the issue by pointing out that it was unrealistic to insist on an outright ban of development on flood plains. Instead, Pitt (2008) emphasised that the most realistic approach is development control to ensure that institutional frameworks are strengthened in managing flood risk - avoiding development in risk areas where possible and, where such development does take place, to ensure that risk is reduced both to the development itself and for those living nearby.

Additional issues associated with the role of insurance companies in the reinstatement process of flood-damaged domestic property are discussed further section 2.7 (from page 41) where the domestic flood claim chain is explored.

2.6 WHEN DISASTER STRIKES!

When a flood event occurs, anything and anyone in the path of the deluge will almost certainly bear its brunt. The damage caused to infrastructure and properties are well known but the impact on people, have until recently not been fully considered. This sub-section briefly deals with the human side of flood events, and homeowners' needs in the aftermath of flood disasters.

2.6.1 Factors that influence the severity of flooding on households

Floods can have devastating effects especially when they arrive without warning. The most visible and obvious impact of floods upon households is the physical damage to the fabric of the building and contents, which may or may not result in financial loss to the homeowner; however, there are other more 'indirect' losses, which are often overlooked (Green *et al*. 1983). These indirect losses are generally associated with disruption to the 'normal' course and quality of life (refer to Green *et al.* 1983, for further reading).

The stress associated with losing personal belongings, having to live in temporary accommodation while repairs are undertaken, and the trauma of the clean-up and restoration can be considerable. Several studies have also highlighted the various effects of flooding on households (FHRC, 1999, 2001, POST, 2002, Office of the Deputy Prime Minister, 2003), the main ones being:

- Property damage related - damage to garages, garden plants/ponds, sheds and outbuildings; having to arrange repair work; cleaning the property following flooding with potential residual smells and damp problems (Office of the Deputy Prime Minister, 2003).

- Financial - financial pressures of repairing the damage, particularly for people who are not fully insured; potential reduction in property value (Office of the Deputy Prime Minister, 2003); loss of employment, production and/or earnings (Green *et al*., 1998; Office of the Deputy Prime Minister, 2003).

- Health problems – various physical or mental (psychological) health problems due to flooding impact threat (Green *et al*., 1998); anxiety of flooding recurring (Green *et al*., 1998; Office of the Deputy Prime Minister, 2003).

- Loss of symbolic objects - personal belongings, particularly those of sentimental value and irreplaceable such as photographs, paintings. (Green *et al*., 1998; Office of the Deputy Prime Minister, 2003); loss of pets (Office of the Deputy Prime Minister, 2003).

- Social effects – a sense of loss of time due to inconvenience of event; disruption owing to loss of social connections and sense of 'community', possibly in the case of severe floods (Green *et al*. 1998).

- Other inconveniences - having to live in temporary accommodation while repairs are undertaken; possible additional costs of living in temporary accommodation and worries over the security of the empty property (Office of the Deputy Prime Minister, 2003).

The factors that potentially determine the severity of the impact of flooding on households may be broadly be classified into two categories (Green *et al*. 1983):

- Flood characteristics - duration, depth, speed of development, whether anticipated or not; concomitant climatic weather conditions (e.g. snow and rain); contaminants (e.g. sewerage, oil and silt)

- Individual's characteristics - age, prior health status, prior stress levels, whether or not evacuated and duration of; event anxiety; aftermath anxiety.

In addition, the timing of the flood event or "where the claim (or flood damage) sits in relation to other personal events" (Business & Market Research, 2001), is a crucial factor that may exacerbate the flood's impact on a homeowner. The personal events vary and may include occurrence of a flood event during a holiday period, in the aftermath of a terminal illness diagnosis or household financial crises.

The damage caused by disasters is highly influenced by flood characteristics – the scale and nature of the flood event (Soetanto *et al.,* 2002). Apart from those already mentioned, other suggested aspects that may be classified under 'flood characteristics' are timing of flood event (for instance Easter or Christmas time when households anticipate having a good time), the rarity of the event in locality (FHRC, 2001).

While flood characteristics, to a large extent determine the extent of the physical damage caused by a flood event, individual characteristics of the household may have a lot to do with how well individuals will cope. Business & Market Research (2001) found that some individuals seemed to have coped with the same flood event better than others, attributing this to both 'innate' and 'learned' characteristics of individuals. However, the subject of how individuals cope with disasters is more complex and beyond the scope of this study.

These factors that determine the severity of flooding on households (flood characteristics and individual characteristics) are likely to influence homeowners' specific requirements with respect to flood restoration services.

2.6.2 Experiencing the Flood Event: The human side of flooding

It is now widely accepted that that the impact of flooding is not just economic, in terms of the damage done to infrastructure. The social, health-related, and psychological impacts have been recognised and emphasised in recent years (Tapsell, 2001; Tapsell and Tunstall, 2003).

Section 5.5.1 of this thesis presents findings of this research on the subject of homeowners' experiences in the aftermath of flooding to their domestic property. These findings were also published in Samwinga *et al.* (2004).

Werrity *et al.* (2002: 59) stress that:

> *the direct effects of flooding are frequently highly stressful, especially for vulnerable groups (the elderly and young), for single heads of households (frequently women), and pose severe financial penalties for those who do not have household insurance (being a surprisingly high 30% of occupants in some cases).*

Another aspect of homeowner experiences associated with flooding is the fear of repeat flooding when it rains, particularly for vulnerable people such as children and elderly people. This has been identified in a number of studies (Environment Agency, 2001;

Shackley *et al.*, 2001) as a real emotional issue that continues to affect homeowners after a flood event.

Key flood characteristics have already been discussed in section 2.3.2 (refer to page 19), while service quality and satisfaction aspects of the homeowner experience are discussed in subsequent sections of this thesis.

2.6.3 Service Quality issues during post-flood insurance claims

Chinyio (1999) identified numerous "construction clients' needs" from literature and produced a fairly comprehensive list, grouped in eight categories namely *aesthetics, economy, service quality, 'product' quality, relations, health and safety, commitment and flexibility,* and *time*. These requirements however relate to clients with commercial and industrial construction projects and may not be applied directly to domestic property occupiers, in the context of flood damage. This is because of the unique nature of flood-damage repair 'projects', as opposed to ordinary construction projects (refer to section 1.2 for further discussion).

Homeowners' needs or the desires and requirements of the insured concerning the repair/reinstatement of their flood damaged domestic properties are as varied as the individuals themselves. As with any other group of people, homeowners who have experienced flood damage are not a homogeneous population; they differ in various respects some of which have already been highlighted (i.e. individual characteristics). Hence, homeowners cannot be expected to attach the same level of importance to various requirements; their expectations are also likely to vary.

In addition, customers' expectations are generated and shaped by various factors such as past experience, explicit service promises, implicit service promises, and word-of-mouth communications. For instance a homeowner who has experienced flooding to their property before may have different expectations (higher or lower) in a subsequent episode of flood damage and restoration. However, the ultimate aim of the reinstatement process is to contribute to returning victims of floods back to a pre-flood state, something which does not automatically happen by virtue of a claim being settled. Figure 2.3 (*adapted from* Woodhead, 2008) shows the potential impact of flooding on a household, demoting people from whichever level they had attained to the lowest rung on Maslow's hierarchy of needs, where they are once again in need of basics such as food, clothing and shelter. However, not all homeowners are affected by flooding to the same extent that their property is no longer habitable. In addition, the diagram does not suggest that all flood victims will necessarily have attained self-actualisation prior to a flood event. It simply serves to illustrate the potential impact an event such as flooding can have.

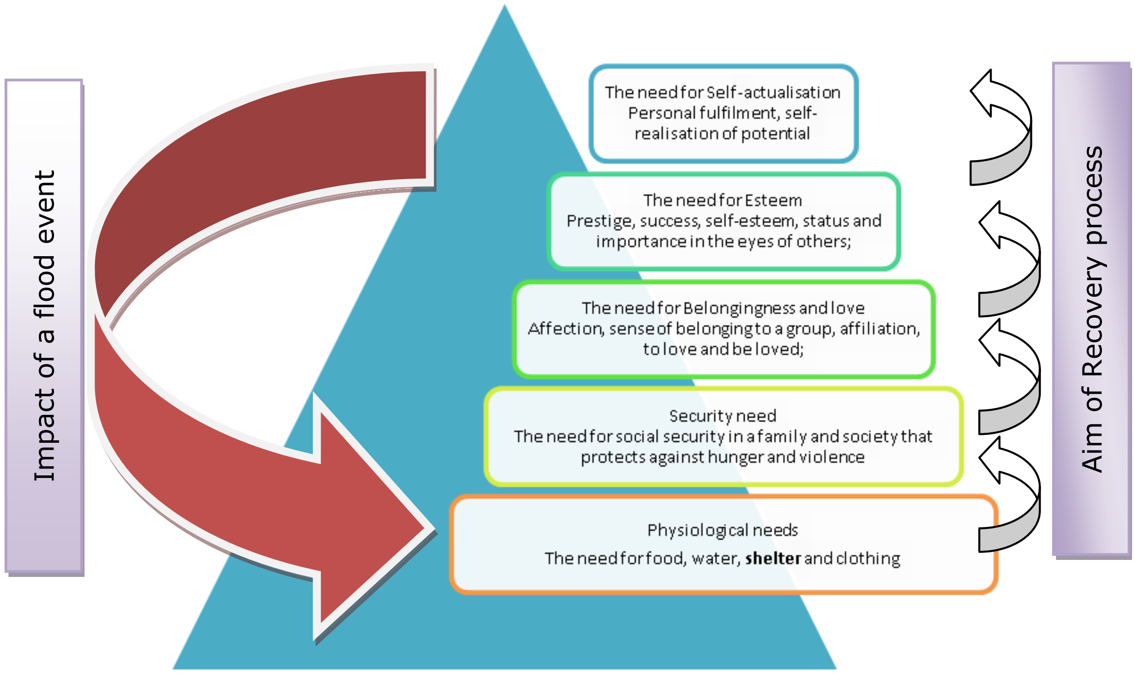


Figure 2.3 Flood events and their victims

Source: adapted from Woodhead (2008)

The restoration of flood-damaged domestic properties involves 'projects' and customers (insured homeowners) that have significantly different characteristics from those of ordinary construction projects. Samwinga and Proverbs (2003) summarized the unique features of flood-damage reinstatement 'projects' as being:

- Recovery and restoration - returning the flood-damaged property to its pre-incident condition.
- Flood restoration works, which by nature, usually involve processes such as cleaning, drying, 'deodorising', sanitation, which are unique.
- The size, usage and contents.

- The involvement of flood damage claims, which can be very complex to handle.
- The parties involved in flood reinstatement projects being typically the homeowner, insurer, contractor(s) (cleaning, drying, and repair), loss adjuster, and sometimes loss assessors, whereas 'ordinary construction projects' typically assemble a team consisting of the client, designer, consultants and contractors.
- 'Customers' (insured homeowners) undergo a potentially traumatic experience often resulting in anxiety during and after the flood event (Green *et al*. 1983).
- Loss of symbolic objects or irreplaceable assets of sentimental value, underinsurance on buildings and no insurance on contents (resulting in financial loss), which may exasperate the trauma experienced by homeowners.

Due to a dearth of literature on the needs of homeowners in flood damage repair works, Samwinga and Proverbs (2003) compiled a comprehensive list of potential needs of domestic property occupiers. Seven categories of homeowners' needs were identified (refer to Table 2.4) as economy, utilitarian needs, relations and communication, health and safety, commitment and flexibility, and time. These were further evaluated during the semi-structured interviews whose findings are reported in Chapter 5.

The BDMA (2002) stipulates that homeowners are entitled to expect a level of service that meets their recovery needs as stipulated in the basic flood recovery procedures. The emphasis in the guidelines is mainly focused on meeting property owners' utilitarian and health and safety needs (refer to Table 2.4) during the recovery of the physical property. However, homeowners are likely to go beyond these basic needs and expectations to require those listed in the other categories of Table 2.4 such as time, relations and communications, relations and commitment, economy and aesthetics.

Table 2.4 Potential homeowners' Needs in flood restoration work

NEEDS	FEATURES
Time	Prompt response upon registering of a claim
	Prompt assessment of the cost damage/restoration
	Prompt settlement of interim payments (if applicable)
	Prompt processing of insurance claim
	Early start of repair works
	Timely completion of repair works
Utilitarian Needs	Completed repair work to match pre-existing standards
	Comprehensive damage assessment
	Repairs to incorporate alternative/latest technology
	Value for money i.e. desired quality at appropriate price
	Building to be efficient for intended purpose
	Property to be clean, dry, odour free and sanitised
	Comfortable temporary accommodation of comparable standard
Relations and Communication	Familiarity with flood damage restoration firm
	Sensitivity to homeowners' distress resulting from flood damage and loss
	Desire to be kept informed about the insurance claim
	Desire to be actively involved and kept informed of the repair works
	Advice on possible flood resilient repair works
	Non-confrontational relationship with flood damage restoration firm
	Clear allocation of responsibilities between parties
	Desire for expert guidance and explanation of all aspects of claim process
Health and Safety	Easy access to contact insurers in the aftermath of flooding
	First point of contact to provide professional and reassuring advice
	Provision of Health and Safety information
	Desire to be alerted to potential health threats resulting from contamination
	Minimal exposure to risk for the customer
	Recognition of risks & uncertainty associated with repair works
	Minimal inconvenience to occupier resulting from repair work
Commitment and Flexibility	Flexibility to change the specifications (even) during repair work
	Flexibility to incorporate flood resilience measures in repair work
	Guarantees on restoration work such as drying
	Extent and nature of repairs to be to prescribed industry standards
Economy	Fair settlement of claim
	Indication of projected costs
	Periodic appraisal of projected costs
	Price of the product to meet the budget (approved claim amount)
	Avoidance of disputes and extra costs
Aesthetics	Pleasant looking property on completion

[Adapted from Warwickshire Trading Standards 1998, Chinyio (1999), BDMA (2002) and interviews with industry practitioners]

As earlier indicated, homeowners' needs will vary from individual to individual, depending on several factors that impact on their needs. Individual homeowners in any of the 'vulnerable' categories such as the elderly, those previously ill and the disabled have been identified as more likely to be adversely impacted by flood events (FHRC 2001), and hence may have special needs. In addition, householders who have experienced flooding to their homes before are more likely to be better able to cope with the experience and may have different needs and expectations from those experiencing flooding for the first time.

Zeithaml and Bitner (2000) present the principal expectations of customers of automobile insurance services and property and casualty insurance (commercial customers) as: to be kept informed, to be supported and not treated like a criminal, fair treatment, prompt service, cover from catastrophe, and honouring of obligations. These principal expectations are likely to be the same for insured homeowners.

Due to the importance of customers' needs, which form an integral part in customer satisfaction efforts, it is important for insurers and other service providers to be familiar with key homeowners' needs and provide a service aimed at meeting and/or exceeding those needs.

2.6.4 Homeowners Satisfaction with flood damage repair services

When flooding occurs resulting in damage to insured properties, insurers and repairers are called upon to provide services to insured homeowners in order to return the dwellings back to a habitable state. Such services offered by insurers and repairers to homeowners have not been spared criticism (Watkins and Welsh Consumer Council 1992; Warwickshire Trading Standards 1998) for short-comings in areas such as promptness of claims processing and settlement; role, competence and impartiality of loss adjusters; communication; involvement of insurers in monitoring and supervising repairs; comprehensiveness of damage assessment; promptness of payments and general relations with the insured. These factors, among others, appear to influence homeowner's ultimate feelings of (dis)satisfaction with the level and quality of service provided by insurers and repairers, while further questioning the insurance industry's commitment to customer care and satisfaction.

More recently, Hendy (2006) raised concerns regarding the services provided to homeowners during insurance claims. Some of the service-related experiences cited are as follows:

- Feeling of displacement – moved seven times in a month,
- Expectations – some homeowners thought they would be back within six months,
- No clear accountability – didn't know who to complain to,
- Irregular site attendance by workmen,
- Poor standards of workmanship,
- Neighbours with similar properties and policies having different repair works done to their properties,
- Homeowners feeling pressured to agree a settlement they were unhappy with,
- Inconsistence and failure to keep promises – "they kept moving the goal posts and breaking promises. They had no understanding of the stress caused."

According to the a survey conducted by the Pitt Review (2008), post-flooding recovery insurance services in the aftermath of the summer 2007 floods were found to be reasonably good. The majority of homeowners surveyed (72%) were satisfied with how their claims were handled while 22% were dissatisfied. Primarily due to factors such as:

- Repair process taking too long,
- Difficulties in getting information,
- Taking too long to obtain advice, and
- Taking too long to deal with problems.

The Pitt Review (2008) concluded that insurers could improve their services through provision of better communications, managing expectations and being clearer and more consistent about the claims process. This is very important because the impact of a poorly handled claim can exacerbate the overall impact of a flood event on households.

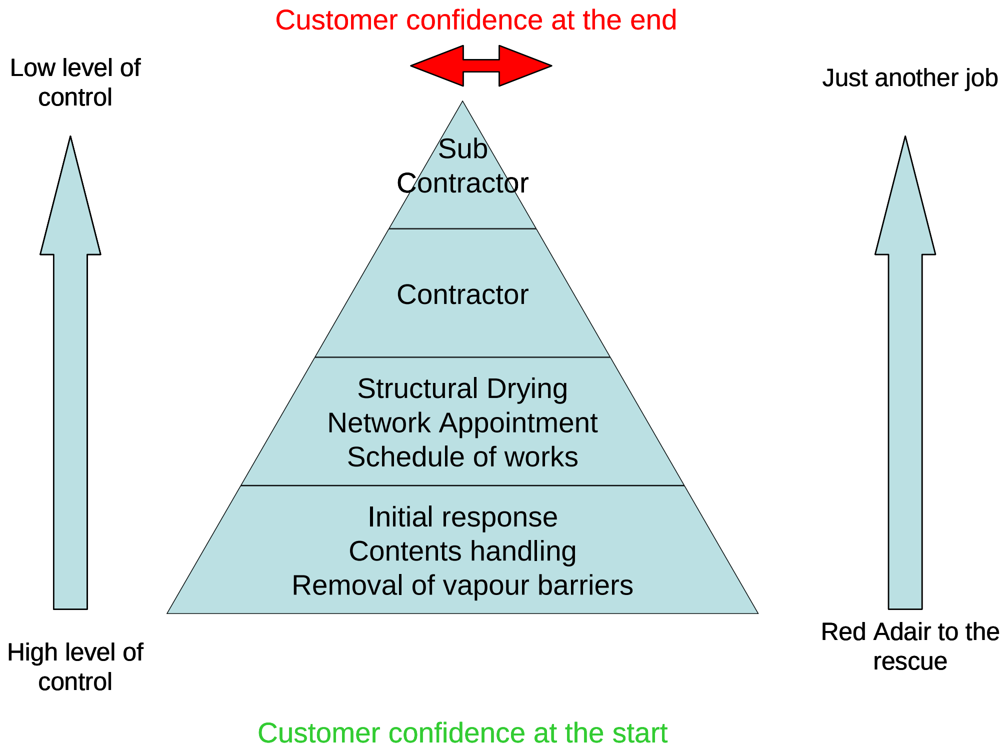
The ABI (2007), which represents over 400 UK insurers, recognises that the issue of expectations and communication of these expectations to insured homeowners is crucial if its members are to provide services that result in homeowner satisfaction. In their review of the summer 2007 flood events, the ABI recommended the development of common minimum information to flood victims about their claim in conjunction with organisations such as the National Flood Forum. Such information would include a contact name, telephone number within the insurance company's and possibly the insurer's proposed indicative timescales for reinstatement and a process map. Although this may be a step in the right direction, what really counts to an individual homeowner's experience is what the individual service providers and particularly their front-end staff/representatives do in the "moment of truth."

It is common knowledge that the repair of a flood-damaged property can take many months. The ABI suggests that repair process can take 12-18months for a typical flood damaged property (ABI, 2007). As a result, homeowners are bound to grow impatient at what they perceive as lack of or slow progress in the repair of their home (Werritty, *et al*., 2002). Unfortunately, the realistic timescales of the process may not match the expectations of homeowners who may be hoping to be back into their completed properties within a shorter period of time. In his interim report, Sir Michael Pitt remarked on 16 April 2008, regarding the progress of recovery in the aftermath of the summer 2007 floods in the UK: "Thousands of people are still out of their homes a situation which is worrying and perplexing some ten months after the summer's events." (Pitt, 2008)

About twelve months after the Summer 2007 floods, the majority of insurance claims were settled. However, out of approximately 14,500 homeowners who were provided with alternative accommodation by insurers, local authorities estimated that 4,750 (33%) households were still not back in their homes by the end of May 2008 (Pitt, 2008). This is in spite the ABI's prediction that only four percent (4%) of policyholders who moved to alternative accommodation would still be out of their homes by the summer of 2008. These figures illustrate how easy it is for service providers to set themselves for a fall by raising homeowner expectations regarding timescales, resulting in homeowner dissatisfaction when the targets do not seem to have been achieved.

This is an area where service providers could make a difference by guiding homeowners through the process, outlining what needs to be done together with realistic anticipated timescales.

Figure 2.4 shows the continuum of experiences that homeowners potentially go through during insurance claims for the repair of their flood damaged properties. At the start of the claim, homeowners are usually reassured of the level of care and service they can expect to receive during the claim but by the end of the claim their confidence hits an all time low. This is usually due to a number of factors including the level of control and attention paid to the claim by professionals involved.



Source: Woodhead (2008)

Figure 2.4 Customer confidence levels during claims

2.7 POST-FLOOD DISASTER RECOVERY AND REPAIR

The value of flood cover, like any other form of insurance, often becomes more appreciated in the aftermath of a flood disaster, than in 'times of tranquillity, before an insured peril materialises. The benefits can be immense for a homeowner who has experienced flood damage to their property – the ability to replace their damaged possessions as well as covering the cost of repairing buildings, which is crucial in minimising the impact of the event on the health and well-being of households (Pitt, 2008). Therefore, insured homeowners have a somewhat just expectation to be looked after by their insurers and to be assisted to return to some form of normality as soon as practicable. This sub-section explores the repair process, including the various facets of the homeowner experience following a flood event.

Figure 2.5 attempts to schematically illustrate the domestic flood claim chain together with the factors that impact upon performance of each party and ultimately on the experience of homeowners. Four key 'components' are presented, in order to provide a comprehensive discussion of the flood-damage repair process and associated issues. The four components are: the flood event, the service component, the project component, and the homeowner component. It is argued that these components are interrelated and interact to impact on the homeowner's experience; these aspects are further discussed hereafter.

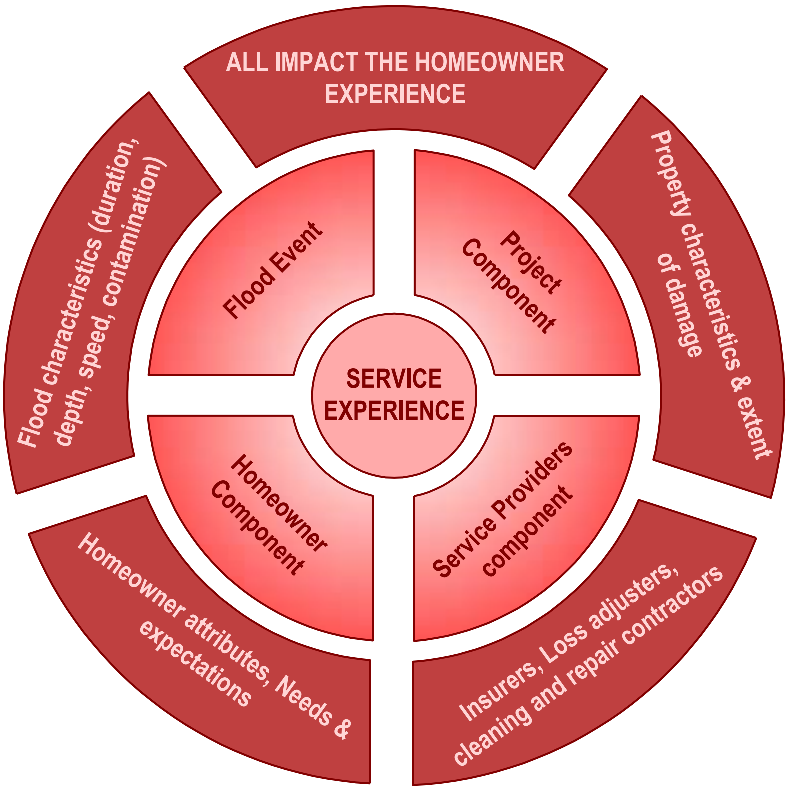


Figure 2.5 Components that interact to impact the homeowner experience

2.7.1 The Flood Event

The flood component is the starting point in this service experience framework, since its flooding which causes damage to property that triggers off the claim process. Flood events characteristics include:

- duration,
- depth,
- speed of development,
- whether anticipated or not,
- weather conditions, and
- contaminants (e.g. sewerage, oil and silt.).

All the above characteristics are discussed in detail in section 2.3.2 (refer to Chapter 2).

2.7.2 The Project Component

The project component consists of issues surrounding the nature of the project itself. An insured homeowner will typically alert the insurance company that their property is likely to be or has in fact been flooded. The insurer then either appoints a loss adjuster to survey the damage and appoint the necessary parties/contractor(s) or consents to the homeowner taking charge of the reinstatement process in which case the homeowner typically appoints their own loss assessor to oversee the repair work.

The project (flood damaged property) also has its own attributes, which indirectly influence the service providers' performance by either enabling or hampering their duties (Soetanto, 2002). The relevant project attributes include:

- Scope of work – extent of physical damage to building and contents, cleaning, drying, 'deodorising', and sanitation work;
- Property characteristics – size, shape, height, construction type, pre-incident condition.

2.7.3 The Service Providers Component

Insurance cover protects the insured (policyholder) against loss or damage caused by one of the insured events specified in their insurance policy. This means that the insurance company will be placing the insured back in the same position they were before the occurrence of the insured event (Flood Repairs Forum, 2006). In order to achieve this, insurance companies have three basic options:

- Pay for the cost of repairing the damage,
- Appoint someone to undertake the repairs,
- If it is not possible to pay for the damage to be repaired or replaced economically then a cash settlement may be made.

2.7.3.1 A six stage approach to customer service in flood claims

The Flood Repairs Forum (2006) outlines six recommended stages when executing a claim for the repair of an insured flood damaged domestic property as follows:

Stage 1 – incoming claim from policy holder. This is primarily aimed at obtaining timely and accurate information regarding the insured homeowner, their insurance cover and contact details, particulars about the incident and the extent of damage.

Stage 2 – Communicating to the policy holder by a third party assigned to the claim such as a loss adjuster. The next stage involves the assigned third party, usually a loss adjuster, making contact with the homeowner and arranging the first visit.

Stage 3 – The initial visit to the policy holder (loss adjuster, damage management company). This stage should ensure that the claim is validated, the homeowner is reassured, and the claim process is outlined to them together with the setting of expectations such as an indication of how long the process is likely to take. Failure to manage and set customer expectations from the outset is an avoidable factor that often leads to homeowner dissatisfaction.

Stage 4 – Keeping the policy holder updated (loss adjuster, builder, and damage management organisation). Although not really a stage, per se, ensuring that the homeowner is kept informed regarding progress and anticipated timescales throughout the claim is an essential aspect of managing the homeowner's service experience.

Stage 5 – Completion of work by contractors. The Flood Repair Forum (2006) recommends that all parties involved on a claim should ensure that homeowners are duly notified when their work on the claim has been completed. It is also suggested that once the claim is settled, the insurance company should notify the homeowner and ascertain whether or not the insured are satisfied with the outcome and process of the claim.

Stage 6 – Feedback. The final stage is aimed at measuring homeowner satisfaction with the services received from each of the parties involved in the claim. Such evaluation should cover all aspects of the claim including communication, quality of work undertaken and quality of service received.

If this good practice was adhered to, a lot of the homeowner complaints would not occur in the first place. Unfortunately, the fragmentation of the service chain in insurance claims, the complexity of flood damage claims, the pressure on resources imposed by widespread flood events, and the drive by some firms to minimise operational costs may result in some aspects of service quality not being addressed at all.

Whereas in a typical commercial/industrial construction project, the main parties are usually the client, designers and contractors, a flood damage repair project typically involves the homeowner, insurer, repairers (cleaning/drying specialist, repair contractors) and loss adjusters.

The performance of each participant in the claim chain, i.e. the insurer, loss adjuster, cleaning and drying specialist, repair contractor, all combine to form part of the homeowner's total service experience during flood reinstatement. However, each of the service providers has individual attributes[4] as organisations, which have a direct

[4] An attribute is a set of characteristics or nature or other phenomenon, typically measurable, that impact on performance assessment.

influence on their performance in a flood claim. These characteristics typically include the firms' capacity (resources, skills and capabilities), experience, past performance and reputation (after Soetanto, 2002).

Apart from the individual service providers' characteristics, the service component also includes:

- The various parties involved in a flood reinstatement claim (insurer, cleaning, drying, and repair contractor(s), loss adjuster, independent surveyors, loss assessors) and their interrelationships.
- The processes involved in the repair of a flood damaged property.

The insurer and the loss adjuster may be one entity, i.e. where an insurance company has in-house loss adjusters. Similarly, the cleaning/drying company and the repair contractor may be one and the same organisation, i.e. where a firm offers a complete damage management service.

2.7.3.2 Insurance companies

In the event of flood damage to their domestic properties, homeowners submit a claim to their insurer (against their insurance policy) to enable them to reinstate their domestic property to a 'pre-flood' condition. Depending on the extent of the damage (size of claim) and the wishes of the insured homeowner, insurance companies can approach the claim process in several ways such as:

- ❑ Verify and approve a flood damage claim and then pay out a cheque to settle the claim for reinstatement without getting involved in the process of repair.
- ❑ Appoint a flood damage restoration firm (repairer) to undertake the repair works and settle the claim either through a single payment or interim payments.
- ❑ A combination of the above options.

However, as a way of enhancing customer loyalty, insurers traditionally tend to get involved in the process of restoration by both engaging a restoration company as well as paying for the repair works that are covered by the insurance policy.

The main aim of the restoration work is to return the property to its pre-flood condition, although it would be prudent for flood resilient repairs to be undertaken where the risk of flooding recurrence is high so as to help minimise future costs due to flood damage. Where flood resilient repairs would involve additional costs, homeowners may be expected to shoulder the extra cost for any such repairs.

2.7.3.3 Loss adjusters

Loss adjusters, who are usually the first people on the scene, are claims specialists engaged on flood damage claims and paid by the relevant insurance company. Their involvement usually depends on the extent of damage to the property (CILA, 2002). Their job is to assess the amount of damage and the work needed to reinstate the property to its pre-incident condition. This includes checking policy cover, estimating costs, carrying out the ongoing supervision of the work, and making recommendations to the insurance company about interim and final payments (Crichton, 2002).

2.7.3.4 Cleaning, drying and repair Contractors

Flood damage reinstatement 'projects' involve 'contractors' too, just like 'ordinary commercial construction projects'. However, their job in flood-damaged reinstatement is to restore the property to a habitable condition once again. Unlike ordinary construction projects, a previously flooded property has to be cleaned and dried out by drying specialists before it can be repaired. This can take a long time, depending on how much water was in the property and how long it was in the building. Once the cleaning and drying is completed, a range of other specialist building trades is involved in the reinstatement process.

The choice of contactor for the repair of flood-damaged property seems to be an important issue to homeowners. There is usually a feeling of loss of control by the homeowner once a claim for the reinstatement of the property commences. To minimise the unease experienced during the repairs some homeowners prefer to have a contractor who is familiar to them. This is partly because homeowners often leave their keys to the property with the contractor and may or may not be present during the repair periods. In addition, some of the contents may also be kept with the property during this time. It is therefore essential for insurers to liaise with the homeowner about their preference on the choice of contractors.

In the construction industry, project owners are usually involved in the choice of the contractors for their projects. There is no reason why insurers and/or loss adjusters should not exercise flexibility to allow homeowners who elect to do so, to choose their own contractors during the repair of flood-damaged property.

Insurance companies tend to have their own repair networks which consist of loss adjusters, cleaning and drying firms and repair contractors. Such networks are usually activated as and when flood events occur.

2.7.3.5 <u>Other parties</u>

Unlike loss adjusters, who are engaged by an insurance company and are paid a fixed fee, loss assessors, deal with claims on behalf of policyholders on the basis of receiving a fixed percentage of whatever they recover for their customer (CILA, 2002).

2.7.4 The Homeowner Component

The specific characteristics of the individual homeowner such as age, prior health status, prior stress levels, whether or not they move into alternative accommodation and the duration of such a stay, the resultant anxiety due to the flood event and its aftermath, all have a bearing on homeowner requirements and expectations and ultimately on their evaluation of the service output. Other homeowner attributes include:

- The extent of trauma or impact caused by the flood event (Green *et al.*, 1983).
- The loss of symbolic objects or irreplaceable assets of sentimental value.
- Underinsurance and/or no insurance on buildings or contents (resulting in financial loss).

In addition, the homeowner component also incorporates the needs and expectations of homeowners. Expectations are the customer's beliefs about the range of likely outcomes of service offerings against which performance is evaluated. This evaluation by the homeowner ultimately determines the level of satisfaction with the service output thereby impacting the homeowner’s experience in the aftermath of flooding.

2.7.5 Dealing with flood damaged property

In the aftermath of a flood event, the reinstatement of a flood damaged building can be divided into 3 stages (ABI, 2007):

- **Clearance and cleaning** – cleaning is a precursor to proper drying out. Involves removing silt and debris and ensuring the property is safe (gas and electric appliances checked). Clearance involves the removal of damaged and wet furnishings, fittings, plaster and woodwork.

- **Decontamination and drying out –** once the clearance and cleaning has been undertaken, a slow process of decontaminating and drying out follows. It is slow because flood waters often soak deep into the very fabric of the property. This means that walls or floors may appear deceptively dry when they are not and hence it is crucial for the drying to be undertaken by specialist drying firms who usually provide documents certifying that the property is dry enough for reinstatement work to commence.

- **Repair and reconstruction work** – once a previously flooded property has been cleaned, sanitised and dried out, the repair and reconstruction work can then commence. The duration of the repair stage will vary depending on the age and construction of the property. It is not uncommon for Insurance companies to use their own repair networks to do the work, although homeowners may be permitted to use their own local contractors.

The BRE good repair guides provide a checklist and guidelines of dealing with flood-damaged property. The guides are divided into parts 1-4, as follows:

- **Part 1** – immediate action,
- **Part 2** – ground floors and basements,
- **Part 3** – foundations and walls, and
- **Part 4** – services, secondary elements and finishes.

The British Standards' own PAS 64 (BSI, 2005) is a useful source of information on professional water mitigation and initial restoration of domestic dwellings. In addition, readers wishing to explore the repair process further are referred to these guides. They provide a good source of information for homeowners, occupiers, surveyors, repairers and insurers.

2.7.6 Flood Resilient Repairs

Resilient repair for previously flood-damaged properties is an area gaining significant interest in recent years (Bowker, 2002; DTLR, 2002; Proverbs and Soetanto, 2004; Garvin *et al.*, 2005; Bowker *et al.*, 2007; Soetanto *et al.*, 2008). Emphasis is placed on the need for the repair of flood-damaged properties to include features that could minimise the impact of future flooding. However, Soetanto *et al*., (2008) conclude that the uptake of resilient repairs has been limited in flood-affected areas, combined with the limited evidence of long-term financial benefits of such measures and a lack of cohesive approach to acknowledgement associated with such resilient repairs by the insurance industry through reduction of insurance premiums, for instance.

The government's strategy for dealing with the rising challenges relating to water damage proposed a coordinated and integrated approach in which the EA would take a leading and overarching role in dealing with all **flood risk management**. However, the proposal has not yet been implemented and hence a disjointed response and approach still exists (ABI, 2007). These proposals contained in the policy framework "Making Space for water" also include guidance on improving the performance of new properties, covering such areas as flooding risks, the planning process; design strategies and the options of avoidance, resistance and resilience (DEFRA, 2008). There is a recognition and admission that "while planning policy aims to direct inappropriate development away from flood risk areas, some building will be necessary to maintain existing services and communities. Therefore, structures should be designed and constructed to keep people safe, reduce financial losses and speed up recovery" (CLG, 2007).

Notably, flood resilience for new buildings is not yet a requirement of Building Regulations. It is hoped that the guidance produced by DEFRA will continue to provide guidance in the interim. It remains to be seen how well the guidance will be adhered to in the absence of legislation enforcing flood resilience standards.

2.8 SUMMARY

The chapter has presented what happens in the aftermath of a flood event, with respect to the parties and process involved. The needs and expectations of homeowners in insurance claims for the repair of flood damage domestic property are presented. Concerns regarding homeowners' satisfaction are also presented based on the literature review.

Factors that potentially determine the severity of the impact of flooding on households have been discussed under two categories, namely: flood characteristics (duration, depth, speed of development, whether anticipated or not, concomitant climatic weather conditions; contaminants) and Individual's characteristics, such as age, prior health status, prior stress levels, whether or not one was evacuated, event anxiety, and aftermath anxiety.

In addition, the post-disaster recovery and repair process has been discussed in the context of insured homeowners' service experience. Emphasis was placed on the role played by the various components, especially the service providers, interacting to impact on the homeowner experience following a flood event and the reinstatement process.

3.1 INTRODUCTION

Satisfaction and service quality have received significant attention from executives and researchers over the years, resulting in a huge body of literature in several different disciplines (including economics, business, marketing, psychology and sociology), each based on slightly different theoretical premises. This chapter presents a discussion of satisfaction - how it is conceptualised and measured; service quality - how it is conceptualised and how customers evaluate it; and expectations – their formation and role in evaluation and perception of services. A distinction is made between service products and physical products and their relationship to satisfaction and service quality. In addition, the interrelationships among the concepts of customers' needs, expectations and satisfaction, and satisfaction versus service quality are also explored. Such a discussion was deemed essential in laying the foundation of the current research.

3.2 FOCUSING ON THE CUSTOMER

One of the major functions of marketing is to ensure that customers' needs are met profitably. In order to accomplish this task, businesses ought to understand their customers' needs, a task that is admittedly not always simple to perform (Kotler, 1997), in part due to factors such as: customers not being fully conscious of their specific needs and/or failure to articulate their needs. The view that some customers are not fully conscious of their needs is not without criticism and is contradictory to the suggestion put forward by Blythe (1997) that needs go beyond mere lack, i.e. the individual must realise their need in order for it to be described as need in the first place. While businesses may identify their target market relatively easily, they may still fail to understand their customers' needs (Kotler, 1997), of course at the company's own peril.

The words *client*, *consumer*, and *customer* are used in literature quite freely, often as synonyms (especially in the case of 'consumer' and 'customer'), although their meaning is sometimes presented in a rather simplistic manner. A brief discussion of these interrelated terms is below presented.

The Encyclopaedia Britannica (2002) defines the term "client" in two main ways, one of which suggests a person who engages the professional advice or services of another. The word client is also considered to be a synonym of "customer."

In a construction industry context, the client is often the sponsor of the construction process and is regarded as being at the CORE of the construction process (Latham, 1994). The traditional view is that the client (or client organisation) perceives the need for a project, but generally, may not be in the business of construction *per se* and hence the need to hire design and construction services. Kamara, *et al*. (2002) describes the construction client as the 'organisation' or 'entity' that initiates the building process, sponsors the design and construction of a facility and is usually but not always the owner of the commissioned facility. In addition, the client is not only the purchaser of construction services but may also incorporate other interest groups depending on the nature and scale of the project. Although the client may also be the end-user of the proposed facility, the user and client may be separate entities altogether.

There seems to be a general agreement that clients vary – they come in different shapes and sizes (Latham, 1994; Turner, 1997). A number of classifications of the construction industry client, each with its own focus and interest have been put forward, some of which are discussed below.

Masterman (1992) classifies clients in three ways: firstly as public or private, then as experienced or inexperienced (in terms of construction), and finally as primary or secondary constructors. This classification is reasonable; however, it is a somewhat simplistic way of representing the client, a function that has evolved significantly from a distinct person or body to a much more focused and temporary multi-organisation – often a series of stakeholders; from an occasional builder to a regular builder; from being naïve of the construction process to being highly sophisticated; from outside the construction industry to within it (Rowlinson 1999).

This view is supported by Newcombe (1996) who argues further that the drastic change in the last 50 years in the United Kingdom has often greatly obscured the 'face' of the construction client. The client's identity has been influenced, among other factors, by the emergence of the corporate client, the move to greater participation of the regular builder in the construction industry, the separation of ownership and occupation of buildings, and the emergence of the concept of stakeholders (Newcombe, 1996).

The term "*customer*" is often used to refer to a person that purchases a commodity or service (Gabbott and Hogg, 1998; Encyclopaedia Britannica, 2002). This description of a customer has been criticised by some (Gabbott and Hogg, 1998) for being too narrow in considering a customer only in terms of a discrete transaction or what they purchase from a company. In addition, the definition implies a simplistic economic relationship between a business and a buyer, on the basis of monetary exchange. However, consumption does not necessarily have to involve any direct financial transaction. For instance, people are said to consume political ideas, the countryside and fresh air (Gabbott and Hogg, 1998), and yet without undertaking any direct economic transaction. Therefore, a customer can more appropriately be considered as a person or entity that receives the benefit of the services or product of another.

In the aftermath of flood-damage followed by an insurance claim, insured homeowners normally receive the benefit of the services provided by various parties engaged on their behalf by the insurance company. In a sense, homeowners may better be described as customers of the insurance company, in the entire flood-damage insurance claim chain. The term 'customer' will therefore be preferred to 'client' in referring to the domestic property owners (the insured) in the context of this research.

3.3 SATISFACTION CONCEPTUALISED

Although the subject of 'satisfaction' has received considerable attention from various disciplines, there is no consensus on the definition of the concept, which is admittedly difficult to define (Oliver, 1997). Marketers, argue that if a consumer perceives the performance of a product (good or service) as being below their expectations, then dissatisfaction results. Alternatively, a consumer is happy or satisfied if the benefits received or performance after purchase either matches or exceeds expectations (Jobber, 1998; Adcock *et al.*, 2001; Kotler and Armstrong, 2001). Based on this conceptualisation, satisfaction evidently involves an evaluation or judgment of perceived performance against some standards (expectations).

However, Gorst (2000) points out that in today's competitive business world, it is no longer enough to merely satisfy customers, because a 'satisfied' customer remains a customer so long as there is no better offer; whereas a 'delighted' customer is more than likely to remain loyal. Other authors (Donovan and Samler, 1994; McNealy, 1994; Jobber, 1998; Kotler and Armstrong, 2001) also support this view, that companies should not only satisfy their customers but rather delight them, i.e. exceed customers' expectations. However, it may be rather too simplistic to consider customer loyalty as simply the product of 'delighting' customers.

In spite of the debates in conceptualising satisfaction, some argue that understanding the concept of customer satisfaction is easy.

> *All you have to do is think of how you feel when you're a customer – in a supermarket, on the train, having a car serviced – anywhere. Satisfaction is simple. If you get what you want, if your requirements are met, you are satisfied. If they're not met, you will not be satisfied. Hill, et al. (2003)*

The above description links customer satisfaction to what customers "want" and/or their "requirements." These two aspects are sometimes distinguished in marketing research as "wants" and "needs" which mean different things (refer to section 3.3.4 of this thesis). Although a reasonable rendering of satisfaction, the description above seems rather too simplistic, may be misleading and does not seem to establish the well acknowledged link between satisfaction and "expectations", which is developed later in this section.

In this research, satisfaction will therefore be understood to mean the consumer's fulfillment response resulting from a judgment that a product or service feature, provided (or is providing) a pleasurable level of consumption-related fulfilment, including levels of under and over-fulfilment (Oliver, 1997). In simpler terms, satisfaction is the customer's evaluation of a product or service in terms of whether that product or service has met their needs and expectations (Zeithaml and Bitner, 2000). Dissatisfaction is therefore a consequence of failure to meet the customer's needs and expectations.

3.3.1 Encounter-specific and overall Satisfaction

Satisfaction is conceptually described in various ways. For instance, Rust and Oliver (1994) describe customer satisfaction as a summary cognitive and affective reaction to a service quality incident or a long-term relationship. This description implies that satisfaction is not merely a product of a particular transaction, but that it may also be influenced by long-term service relationships. In a similar way, Bitner and Hubbert (1994) conceptually describe satisfaction using two frameworks, namely:

- Transaction-specific satisfaction - the consumer's dis/satisfaction with a discrete service encounter, and
- Overall satisfaction - the consumer's overall dis/satisfaction with the organisation based on all encounters and experiences with a particular organization.

Transaction-specific satisfaction and overall satisfaction are otherwise referred to as *encounter-specific* satisfaction and *cumulative* satisfaction, respectively. The two concepts are further discussed below

Encounter-specific satisfaction results when an individual transaction is considered on its own, without any regard for the level of service encountered in the past. This seems to apply in the case of a one-off transaction or purchase, such as buying a house from a private individual, who is not concerned with ‘repeat business’ and hence may not be concerned with whether or not the purchaser is satisfied (Gorst, 2000).

In contrast, cumulative satisfaction is based on the idea that a previous encounter will affect the customer’s expectation the next time. This suggests that customers often evaluate overall, the entire purchase and experience with their purchased product (Gorst, 2000). Cumulative satisfaction encompasses the entire customer experience with a service provider.

In the context of the repair of a flood damaged domestic property, satisfaction will be considered at various levels, such as ‘service provider’ specific or ‘overall claim’ satisfaction. To a large extent, the study will be concerned with encounter-specific satisfaction since homeowners will be asked to refer to their most recent insurance claim for the repair of their flood-damaged property. However, it may also be argued that insurance claims for flood-damage repairs are not necessarily one-off transaction specific events, in the sense that homeowners are insurance policy holders. This means that the transaction is not a one off isolated one; instead, insurers are interested in issues of 'repeat business' and hence will be concerned with their customer's satisfaction and continued loyalty. In addition, some claimants may have been flooded before, making their expectations a product, in part, of their previous service experience. It is therefore imperative for service providers such as insurers, to foster loyalty by ensuring that customers are satisfied at the transaction/encounter level as well as overall/cumulatively.

3.3.2 Factors Influencing Satisfaction

According to Zeithaml and Bitner (2000), there are four factors that influence perceptions of service and feelings of satisfaction as discussed below.

i) **Product and services feature** – the specific features of the service or product will significantly influence satisfaction. In an insurance claim for the repair of flood-damaged property, product/service features may include a 24 hour telephone helpline, provision of alternative accommodation, friendliness and courtesy of staff.

ii) **Customer emotions** – customer emotions, whether they be stable or pre-existing (e.g. mood or life satisfaction), negative or positive, induced by the service consumption or not, all have an influence on how customers feel about their service experience. A bad mood for instance, may cause a customer to over-react or negatively respond to a relatively little problem.

iii) **Attributions for service success and failure** – the reasons and/or causes that customers attribute to the success or failure of a service meeting their needs and expectations may also influence satisfaction. Customers have been known to take at least partial responsibility for how things turn out, which has an effect on their feelings of satisfaction. An unprecedented scale of a flood event, for instance, may have a moderating effect on expectations in insurance claims since homeowners are likely to 'understand' that service providers' are stretched, and hence the service may not be excellent.

iv) **Perceptions of equity** – notions of fairness are central to customers' perceptions of satisfaction with products or services. A customer will typically seek to know whether he/she has received a good deal compared to other customers, in terms of price and service level. It has been suggested that homeowners in insurance claims will compare their service to others – friends, relatives or neighbours, whether insured by the same insurer or not, to see if their claim is handled fairly. Discrepancy in the level of service received by homeowners affected by the same flood event is likely to cause feelings of dissatisfaction (Nicholas, et al., 2001).

Customers' needs and expectations feature prominently in models of service quality and satisfaction (Folkes, 1994). It may be useful to underscore the distinction and/or interrelationships among the three concepts. Whereas, needs denote a perceived condition of lack in something desirable or requisite, expectations designate the customer's prediction of what is likely to happen during a specific service encounter. Needs (personal), *inter alia*, influence the formation of customers' expectations of service quality. What a person 'expects' from a service encounter has been highlighted as the standard against which service quality or performance is evaluated to determine an individual's feelings of satisfaction or dissatisfaction.

3.3.3 Expectations and Satisfaction

What a customer 'expects' from a service transaction has been highlighted as the yardstick against which actual (perceived) service quality or performance is measured in determining satisfaction. According to Reber (1995), expectation is the outcome one anticipates from a probabilistic situation. In other words, expectations denote the feelings about an encounter possessed by an individual prior to the encounter. Although an individual's expectations of an encounter can either be 'realistic' or 'unrealistic', 'high' or 'low', they form the basis upon which the individual decides to experience the encounter, having an idea of what is likely to happen during the encounter.

Some service quality authors view expectations as the desires or wants of customers, i.e. what they feel that a service provider *should* offer rather than *would* offer (Parasuraman, et al., 1988). Alternative texts on customer satisfaction seem to depict expectations as *predictions about what is likely to happen during the impending exchange* (Walker, 1995). In other words, expectations are what a customer hopes to receive from a particular transaction or encounter (Adcock, et al., 2001). These definitions seem to share a common thread that expectations refer to beliefs or predictions of likely performance prior to a specific encounter.

For instance, Zeithaml and Bitner (2000: 48) offer the definition that "Customer expectations are beliefs about service delivery that function as standards or reference points against which performance is judged". This definition is similar to that offered by Folkes (1994). For this discussion, expectations will be viewed as the customer's beliefs about the range of likely outcomes of service offerings against which performance is evaluated.

3.3.3.1 Formation of Customer Expectations

Due to the central role played by expectations in understanding satisfaction and service quality, it is essential to consider the origins and nature of expectations. Such a consideration is essential as part of a service providing organisation's process of managing customer expectations. Customer expectations of services are formed and/or influenced by a variety of factors such as:

- Customers' past experience – the customer's previous exposure to the same service (or one that is relevant) will help to shape their predictions of and desires for subsequent encounters (Jobber, 1998; Zeithaml and Bitner, 2000). From past experience, a customer has an idea of the level of service a company provides. However, the actual (perceived) service quality may differ from what is expected due to several factors, such as varying levels of employee competence within a company (Jobber, 1998).

- Service providers' explicit promises - the service provider's promises, for instance during advertising (e.g. brochures, prospectuses, media adverts), help to pitch the level of customers' expectations (Jobber, 1998; Zeithaml and Bitner, 2000). Dissatisfaction may result if the customer sees service quality as falling short of what was expected (Jobber, 1998). Therefore service providers ought to promise only what they can deliver and deliver what they promise.

- Previous encounters with competitors - if a person has obtained a service from a rival company, this may form or influence the customer's expectations of subsequent transactions with other companies (Gorst, 2000).

- Word-of-mouth communication - the experience of other people, such as friends and relatives, during encounters (with respect to goods or services) is likely to be relayed to others. Such information (often perceived as unbiased) once available to an individual will help to form their expectations of goods or services (Jobber, 1998; Zeithaml and Bitner, 2000).

- Company reports/documentaries - Reports on companies and documentaries by consumer programmes and magazines are also another source of expectations (Gorst, 2000).

Evidently, some of the highlighted factors that influence/form customers' expectations can be influenced and/or controlled by service providers. For instance, service providers have control over the explicit promises that they make to customers, for instance with regards to delivery times, task durations. Service providers have an opportunity to influence (via controllable expectations) the yardsticks that their customers will ultimately use to evaluate service quality, in determining whether or not they are satisfied with the service received. In this way, service providers are able to manage the expectations of their customers, which is an essential task.

3.3.3.2 <u>Expectations and the Disconfirmation Model</u>

Customer expectations are the customer's beliefs about the range of likely outcomes of service offerings against which performance is evaluated (Folkes, 1994; Zeithaml and Bitner, 2000). The idea that expectations form a "frame of reference" in service quality evaluations is another reason why a good understanding of expectations by service providers is vital. Zeithaml and Bitner (2000) put forward a conceptual model known as the "Gap Model of Service Quality" which focuses on four customer gaps, namely: not knowing what customers expect, not selecting the right service designs and standards, not delivering to service standards, and not matching performance promises. This conceptual model is based on the rationale that the primary reason why many firms do not meet their customers' expectations is due to the firms' lack of understanding of exactly what those expectations are, i.e. a gap exists between company perceptions of customer expectations and what customers actually expect.

Zeithaml and Bitner (2000), in their conceptualisation of service quality, further propose two expectation standards namely:

- Desired service (upper boundary) – the level of service which the customer hopes to receive, i.e. 'wished for' level of performance, and

- Adequate service (lower boundary) – the level of service, which the customer deems acceptable, i.e. 'minimum tolerable expectation.'

The implication of the above distinction is that customers are likely to be dissatisfied if the service level falls below the minimum level considered acceptable (adequate service), whereas if the service performance exceeds the desired level, customers are likely to be very satisfied (delighted).

The Gap Model of Service Quality essentially represents the disconfirmation model (Walker, 1995) (refer to Figure 3.1), which posits that satisfaction (with goods or services) results from a subjective comparison of expected and perceived levels of performance. It shows that when performance (P) exceeds expectations (E), then satisfaction is likely to be the ultimate result. Alternatively, when performance (P) falls below expectations (E), then dissatisfaction is likely to be the ultimate result. However, when performance (P) matches expectations (E), then customers may be neither satisfied nor dissatisfied.

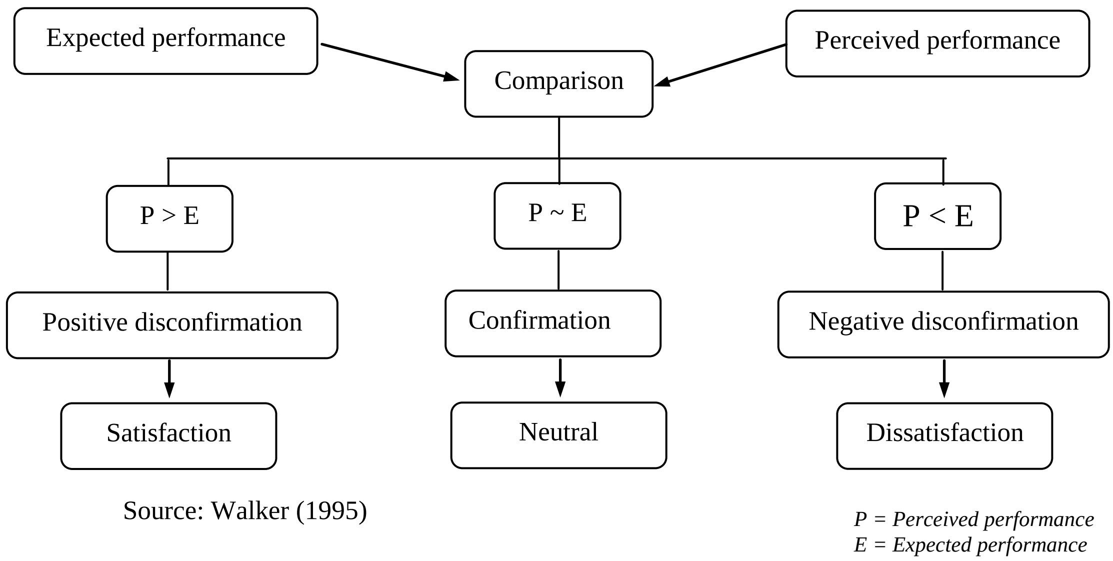


Figure 3.1 The disconfirmation model of customer satisfaction

3.3.4 Customers' Needs

Since this research revolves around the concept of satisfaction, it seems vital that the idea of 'needs' should be addressed; after all, satisfaction, in simplistic terms, entails fulfilment of a 'need' or 'want.' The Encyclopaedia Britannica (2002) defines a "need" in four different ways, one of which is: "a lack of something requisite, desirable, or useful; a physiological or psychological requirement for the well-being of an organism." Similar to the foregoing definition, is that given by Kotler and Armstrong (2001), who define human needs as "states of felt deprivation", which includes basic physical needs for food, clothing, warmth, and safety; social needs for belonging and affection; and individual needs for knowledge and self-expression.

Both of the above definitions emphasise the element of 'lack' or 'deprivation', while the former goes beyond to highlight the aspect of 'necessity for well being.' Adcock *et al.* (2001) also supports this idea by describing needs as a condition where something 'necessary' (e.g. drink) or 'desirable' (e.g. entertainment) is lacking. Chinyio (1999) also concurs that a 'need' is 'a deficiency of some kind', but goes further to argue that it ought to be desired on a regular basis in order to be regarded as being part and parcel of one's personality. Such an extension of the definition of needs seems applicable to human needs only, as opposed to customers' needs for instance.

According to Blythe (1997), marketers describe need as a perceived lack. The emphasis here is that needs go beyond mere lack; the individual must realise their need in order for it to be described as need. This recognition (perception) of lack (unfulfilled need) has been linked to a series of resultant activities in the mind of the consumer as outlined in Table 3.1.

Table 3.1 Formation of Goals and Action

Psychological Event	**Explanation**
Need is recognised	The feeling of lacking something is categorised: for example, the consumer becomes aware that the feeling of unease is caused by hunger.
A drive is generated	A desire to do something about the problem comes to mind.
A relevant motive is selected	The consumer looks for something to eat
A goal is selected	Some specific food is aimed for; perhaps the individual decides to buy a takeaway meal.
A pattern of action is selected to achieve the goal	The consumer decides whether to go out and buy the food, or telephone for it to be delivered.
	(*Source: Blythe, 1997: 12*)

Blythe (1997) argues that needs are by nature a perceived lack and that merely lacking something does not constitute a need, but rather an individual's realisation that they lack something. This view seems at odds with the suggestion made by Kotler (1997), who suggests that customers are sometimes unconscious of their needs.

Closely related to the term 'needs', is the term 'wants.' These two terms are hailed to be the basic concepts underpinning the practice of 'Marketing'. Wants have been defined as the form assumed by human needs as they are shaped by culture and personality (Kotler and Armstrong, 2001). Another definition of wants is put forward by Kotler (1997), describing wants as desires for specific satisfiers of needs.

Based on the two definitions put forward by Kotler (1997) and Kotler and Armstrong (2001), it seems that 'wants' are 'needs' modified by preference – whether it be motivated/influenced by culture and/or individual personality. This point may be illustrated in this manner:

> *An individual may <u>need</u> (i.e. requires or lacks) food but <u>wants</u> (i.e. prefers to satisfy his need with) a hamburger, French fries, and a soft drink. In contrast, another person may need food but want a mango, rice, lentil stew and vegetarian sausages (<u>Adapted from</u> Blythe, 1997; Kotler and Armstrong, 2001 – all emphasis supplied).*

The above illustration implies an element of preference and prevailing cultural practice in the definition of wants whereas needs seem to be linked to necessity. This conclusion was also made by Chinyio (1999), who observed that needs often suggest 'necessities', whereas wants are associated with individual preferences.

3.3.4.1 <u>The Nature of Needs</u>

In order to understand the evaluative factors of consumer motivation, it is essential to highlight the basic building blocks of consumer choice, as enshrined in the theories of motivation and marketers' needs (Foxall *et al.*, 1998). As a result, it has been deemed essential to discuss the nature of human needs in slightly more detail. According to psychologists, human needs and motives are very closely linked, although there is some disagreement on whether terminologies such as 'motives', 'needs', 'urges', 'wishes' and 'drives' are synonymous (Chisnall, 1985).

Customers' needs have been associated with a number of characteristics, some of which are outlined below:

- Needs vary from individual to individual (Duffy, 1974);
- Needs can complement each other (Tatum and Fawcett, 1986; Ashworth, 1991; Ward, *et al.*, 1991);
- Needs can be in conflict with each other (Chisnall, 1985; Tatum and Fawcett, 1986; Ward, *et al*., 1991);

- Needs may vary overtime for a particular individual (Weihrich and Koontz, 1993);
- Needs must be recognised/perceived (Blythe, 1997);
- Needs (and wants) may be satisfied simultaneously by a single product (Foxall, *et al.*, 1998);
- Needs are not entirely definitive and absolute (Chisnall, 1985).

3.3.4.2 Classification of Human Needs

It is useful to commence a discussion on the subject of ‘human needs’ by drawing on the famous work of Maslow (1943), which puts forward a hierarchy of needs, grouped into five categories as namely:

(i) Physiological – the need for food, water, sex;

(ii) Safety – security and order, protection from both physical and psychological loss;

(iii) Belongingness and love – affection, sense of belonging to a group, affiliation, to love and be loved;

(iv) Esteem – prestige, success, self-esteem, status and importance in the eyes of others;

(v) Self-actualisation – personal fulfilment, self-realisation of potential.

One criticism of Maslow’s sequence of needs outlined above is the apparent lack of supporting empirical evidence, despite its wide apparent consistence with sound common sense (Chisnall, 1985) and its wide citation.

Needs have been classed in several ways, by different authors. Blythe (1997) classified felt needs into two broad categories:

(i) Utilitarian Needs – Lead consumers to consider the objective, functional attributes of the product;

(ii) Hedonic (or experiential) Needs – Needs which lead a consumer to consider the subjective, pleasurable or aesthetic aspects of the product;

Foxall, *et al.* (1998) present another classification of needs into six broad categories as discussed below:

(i) Psychological Needs – the needs met by products by virtue of their primary or inherent functional characteristics (e.g. food, housing, transport);

(ii) Social Needs – the needs satisfied by products which act to represent consumers to other people, expressing membership in a social class or group, or convey some other message about the consumer's social relations (may be satisfied by products which serve utilitarian purposes at the same time);

(iii) Symbolic Needs – the needs fulfilled by products through which consumers express to other people and to themselves, their internal psychological state: such as the need to show success, achievement, power, or other dimensions of personality;

(iv) Hedonic Needs – the needs satisfied by products that are consumed for their sensory benefits (e.g. taste, feel, smell). This aspect does not seem to be embraced in Maslow's classification of needs;

(v) Cognitive Needs – this is the 'need to know.' This can be viewed as a rational motive that consumers often have to know and understand their world. In order to appeal to this human need, products such as books, magazines, newspapers, television news programmes and documentaries are supplied;

(vi) Experiential Needs – the need that is satisfied by products consumed because of the feelings they give consumers. For instance, concerts, sporting events, art exhibitions and parties are often consumed due to their effect on consumers' feelings, i.e. they produce desired emotions or moods.

The above classification of customer needs seems to lean heavily on Maslow's work on the hierarchy of needs. However, Kotler (1997) puts forward another classification as follows:

a) Stated Needs – the customer's specific, stated requirements e.g. an inexpensive car;

b) Real Needs – for instance, a customer's requirement for a car whose operating cost, not its initial price, is low;

c) Unstated Needs – customer expectations e.g. a good service from a dealer;

d) Delight Needs – may include any peripheral/complimentary benefits acquired by the customer, aside from what is the object of the encounter;

e) Secret Needs – similar to what others classify as 'social needs (Foxall, *et al*., 1998).

Even though several models have been put forward on what really motivates human behaviour, some authors (Foxall, *et al*., 1998) concede that this is a difficult task. The argument presented is that, it ought to be acknowledged that any specific consumer (human) behaviour may be a function of one of several influences. This central theme advanced by Foxall, *et al*. (1998) is a multi-dimensional approach to consumer motivation. Consumer behaviour is here seen as being driven by several motivation forces classified into the six categories already discussed. In addition, Foxall, Goldsmith and Brown (1998) argue that 'motives' (and/or human needs) function simultaneously and may be satisfied simultaneously by goods and services. This means that a consumer does not necessarily require a discrete product/service to satisfy each need.

Although customers' needs are admittedly numerous and complex, it is essential for businesses to have an understanding of what their customers' needs are and to tailor their services to meet and/or exceed them. In the context of this research, "customers' needs" or the needs of domestic property occupiers with flood-damaged properties shall mean the desires and requirements of occupiers (the insured) concerning the repair/reinstatement of their flood damaged domestic properties.

3.4 SERVICE QUALITY

The importance of the service industry in many economies cannot be over-emphasised. The service sector makes a significant contribution to both national GDP as well as employment in many countries. In the UK, for instance, the service sector has been on an upward trend over the period 1960 to 1995, increasing in terms of share of GDP from 57% to 70% as well as share of sectoral employment from 51% to 71% (OECD, 1997). This picture has of course been accompanied by a decline in the share of manufacturing in the UK economy, relative to the services sector. This sectoral growth may help to explain why services and service quality have become an important issue too, in marketing research (Zeithaml, et al., 1990).

3.4.1 The Nature and Classification of Services

> *There is no such thing as service industries. There are only industries whose service components are greater or less than those of other industries. Everybody is in service (Levitt, 1972).*

What a company offers in the market place often includes an element of service. Consequently, some like the marketing guru Theodore Levitt (*refer to quote above*) argue that all business organisations should see themselves as providing services in varying degrees. According to Kotler (1997), there are five categories of what a company can offer in the market place, namely:

i. *Pure tangible good*: this consists of primarily a tangible good such as soap, toothpaste or salt, with no services accompanying the product.

ii. *Tangible good with accompanying services*: such an offer consists of a tangible good accompanied by one or more services that enhance its appeal to the consumer. For instance, a computer manufacturer's offering would typically involve the product itself and its accompanying services such as delivery, repairs and maintenance, training features, installation instructions, warranty fulfilment.

iii. *Hybrid*: the offer consists of equal parts of goods and services. A good example of this is restaurants which customers go to for both the tangible good (food) and the service.

iv. *Major service with accompanying minor goods and services:* the offer consists of a major service along with minor additional services and/or supporting goods. Airlines, for instance, offer their passengers a transportation service and once a passenger arrives at their destination, they have nothing tangible to show for their expenditure. However, an airline service also includes some accompanying tangibles such as food, drinks, a ticket stub, and an airline magazine.

v. *Pure service*: the offer here consists primarily of a service. Examples include baby-sitting, psychotherapy and massages.

There are several other features that generally distinguish one service from another; Kotler (1997) outlines these characteristics including:

- whether they are provided by equipment (lift, vending machine) or people (construction/ repairs, surveying);
- whether they require customer’s presence (brain surgery,) or not (car repair);
- whether the service is fulfilling a business need (business services) or personal need (personal/household services);
- whether service provider’s objective is profit or non profit, and
- whether the service provider is a private or publicly owned organisation.

The above features influence the company’s approach in providing services. For instance, if a contractor is repairing a flood-damaged property where the homeowner is living, the contractor needs to be considerate of the needs of the homeowner and ensure that disruptions to their normal life are kept to a minimum.

A service can be defined as:

> *any act or performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its product may or may not be tied to a physical product (Kotler, 1997).*

Although it is difficult to generalise, due to differing good-to-service mix, most services have a number of characteristics, some of which are incorporated in the above definition. These characteristics include: intangibility, inseparability, variability, and perishability (Kotler, 1997; Gabbott and Hogg, 1998). Unlike physical products, services are by nature intangible; they cannot be seen, tasted, felt, heard, or smelled before they are purchased. A person getting counselling services for instance, cannot know exactly what the outcome will be (Kotler, 1997; Gabbott and Hogg, 1998). Apart from the above aspects, it is essential to underscore the characteristics that set services apart from physical products. These include tangibility, inseparability, variability, and perishability. Readers wishing to consider these characteristics further can refer to any of the marketing text cited in this chapter.

3.4.2 Service Quality and Satisfaction

Service quality, its importance and measurement have been the focus of marketing literature for some time now. Apart from the growth in the service sector, as discussed earlier, this increased focus on service quality may also be due to factors such as:

- Service quality is seen as influencing an organisation's ability to obtain repeat business from its customers, and
- Service quality is also seen as influencing whether or not the organisation obtains referral from its customers to potential and new customers.

In view of the benefits of service quality, many organisations regularly measure and record the level of service quality, as perceived by their customers (Zeithaml *et al*., 1990).

Parasuraman, *et al*. (1988) defined Perceived Service Quality as "a global judgment, or attitude, relating to the superiority of the service." Similarly, Bitner and Hubbert (1994) define service quality as the consumer's overall impression of the relative inferiority/superiority of the organisation and its services. Other service quality authors

(Cronin and Taylor, 1992; Boulding *et al*., 1993) seem to support this description of service quality.

Service quality and customer satisfaction are critical aspects in many service industries (Stafford, *et al.*, 1998). As a result both managers and academicians have, in recent years increasingly focused their attention on these subjects - their conceptualisation and measurement. Satisfaction occurs when a customer's comparison of the service quality experienced matches (or exceeds) their expectations. This definition more broadly captures the essential elements of satisfaction, but service quality authors seem to differ on whether satisfaction is encounter-specific or cumulative or both. Service quality, on the other hand, is viewed to be the consumer's overall impression of the relative inferiority/superiority of the organisation and its services (Bitner and Hubbert, 1994).

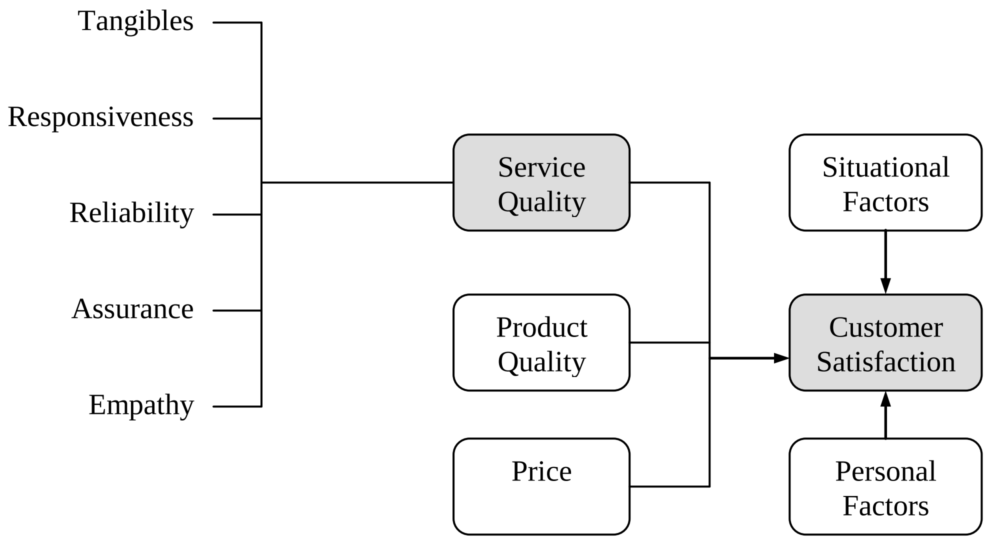
Despite the amount of attention on the subjects, there are still some thorny issues for debate; it is therefore not surprising that there has been a call for greater understanding of the relationship between perceived service quality and satisfaction is needed (Spreng and Mackoy, 1996).

Customer satisfaction and service quality have been presented by some as two distinct but interrelated concepts (Parasuraman, *et al.*, 1988; Bitner and Hubbert, 1994; Stafford, *et al.*, 1998). There is arguably a link between satisfaction and quality. In fact, some marketers argue that the close link between satisfaction exists because quality has a direct impact on the performance of a product and consequently upon customer satisfaction (Kotler and Armstrong, 2001). However, there is still some lack of clarity on the conceptual nature of the relationship and distinction between customer satisfaction and service quality. Stafford, *et al.* (1998) attribute the apparent confusion about the nature of their relationship to the common link with the disconfirmation paradigm (a concept dealt with later in the discussion). The authors conclude that satisfaction is generally described as being experiential, transitory, and transaction-specific, while perceptions of service quality are considered to be more enduring. However, satisfaction is not only transaction-specific but also cumulative. Therefore a broader view is that both service quality and customer satisfaction illustrate both global and transaction-specific elements of their nature (Anderson and Fornell, 1994; Bitner and Hubbert, 1994; Rust and Oliver, 1994).

Another aspect relates to whether customer satisfaction leads to service quality, or vice versa. Parasuraman, *et al.* (1988) pointed out that perceived service quality is a long-run overall evaluation of a service, whereas satisfaction is a transaction-specific evaluation. They argued that customer satisfaction leads to service quality in the sense that incidents of satisfaction over time result in customers' perceptions of service quality. However, others found that service quality is in fact an antecedent of customer satisfaction; satisfaction exerts a stronger influence on customers' purchase intention than does service quality (Lee, *et al.*, 2000).

The distinction between perceived service quality and customer satisfaction is no less clear. Parasuraman, *et al.* (1988) attributed the distinction to the standard by which customers evaluate their satisfaction and perceived service quality. They argue that the basis of expectations that drive satisfaction is prediction of what is likely to happen during the transaction, whereas the basis for service quality evaluations is customers' wants or desires and this is driven by the customer's perception of what they should receive from the service provider.

Figure 3.2 shows the relationship between service quality and satisfaction as conceptualised by Zeithaml and Bitner (2000).



Source: Zeithaml and Bitner, (2000): p. 75

Figure 3.2 Service Quality and Satisfaction Perceptions

Apart from the conceptual controversies on satisfaction and service quality, the idea of expectations is prevalent in literature. What a customer 'expects' from a service transaction or an organisation's overall offerings, is seen as the yardstick or "frame of reference" against which perceived service quality or performance is measured to form the consumer's feelings of dis/satisfaction (Gabbott and Hogg, 1998). The idea of expectations will be revisited in the rest of the study as homeowner satisfaction is considered in the context of insurance claims for the repair of flood-damaged domestic properties.

3.5 EVALUATION OF SERVICES

Evaluation of service providers' offerings is an integral aspect of the study of service quality and satisfaction. This has already been underscored in the discussion of expectations and satisfaction. This sub-section will consider common approaches to the evaluation and measurement of service quality and satisfaction.

The measurement of customer satisfaction is a fundamental component of service quality, which involves the assessment of how well customers' expectations are being met or exceeded in a company's offerings, by comparing expectations of perceived quality with actual performance. The measurement of customer satisfaction is not an end in itself; the aim should be to determine the level of customer satisfaction with the services or goods provided by an organisation, often in the context of continuous improvement.

Customer perceptions of service are evaluated using several different approaches, the most widely used methodologies and techniques being SERVQUAL, SERVPERF, SERVCON, Priority Search and the American Customer Satisfaction Index (Gorst, 2000).

SERVQUAL is a 22-item instrument for measuring customers' expectations and perceptions along five quality dimensions, namely: tangibles, reliability, responsiveness, assurance and empathy (Parasuraman, *et al.*, 1988). The questions on the scale were designed to assess customers' perceptions of a service on the five dimensions. The original instrument involved a "gap analysis" methodology, where the customer's expectations of service quality are assessed at the same time as their perception of the actual service performance. The difference between these two scores (performance minus expectation) is then used as the basis of further analysis. The SERVQUAL model has not been without criticism, one of which pertains to the lack of a clear link between satisfaction and perceived service quality (Duffy and Ketchard 1998). Multiple Marketing-oriented researchers (Babukus and Mangold, 1989; Carman, 1990; Finn and Lamb, 1991; Gagliano and Hathcote, 1994; Lam, 1995) have identified factor stability as a problem for the ServQual instrument's assessment of service quality. Cronin and Taylor (1994) found evidence that ServQual represents a unidimensional model. Others (Brown, *et al*., 1993: 134) earlier concluded that the performance-only element of ServQual (referred to as ServPerf) "performs about as well as ServQual itself".

Despite some criticisms of the model (as discussed above), SERVQUAL still remains popular as a service quality measurement instrument. This is evidenced in the wide variety of industries where the framework has been adopted and utilised. Section 3.5.3 presents a summary of some of the sectors and fields in which the SERVQUAL framework has been used to evaluate service quality.

SERVPERF is an alternative model that was later developed to mitigate the limitations of the SERVQUAL methodology, based on the findings that service quality does not depend on expectations and can be directly measured by simple performance based measures of service quality (Cronin and Taylor, 1994). Although, SERVPERF does not seem to be as popular as SERVQUAL, the authors found that it performed as well as SERVQUAL itself.

The American Customer Satisfaction Index (ACSI) is another methodology for measuring satisfaction. It was first introduced in 1994 by researchers at the National Quality Research Centre, Michigan, as a measure of quality of goods and services as experienced by customers (Zeithaml and Bitner, 2000). A customer satisfaction index is usually applied to benchmark customer perceptions of an organisation over a period of time; this makes the technique more attractive for longitudinal studies.

3.5.1 Is Perception reality?

Individual humans, when motivated, are often ready to act; their actions, however, are influenced, in part by how they 'see' (perceive) the state of affairs. Therefore, it is essential to consider the idea of perception, in particular, in the context of consumer choice, where individuals constantly make judgments about situations.

An interesting basic definition provided by the Encyclopaedia Britannica (2002) is that of perception is:

> *awareness of the elements of environment through physical sensation; physical sensation interpreted in the light of experience.*

This suggests that the individual involved in perception is subjected to some stimuli (a sensation) and that the interpretation is then made in the context of experience (existing data: expectations, past experience).

Two early 'old' definitions of perception from the psychology field are worth noting here.

> *Perception is not determined simply by stimulus patterns; rather it is a dynamic searching for the best interpretation of the available data ...*

> *perception involves going beyond the immediate given evidence of the senses. (Gregory, 1966; in Gross, 1996)*

Perception is also described as:

> *… the process of assembling sensations into a useable mental representation of the world… Perception creates faces, melodies, works of art, illusions, etc. out of the raw material of sensation* (Coon, 1983; *in* Gross, 1996).

The above definitions suggest that perceptions are generated by stimuli gathered by the senses, i.e. the process of perception involves sensory stimulation (Chisnall, 1985; Gross, 1996; Foxall, *et al.*, 1998), which is complemented by information gathering, modification and sorting resulting in our own construct of what the situation looks like. It appears therefore, that the final product of perception is not necessarily an absolute tangible but rather inherently subjective (Chisnall, 1985; Auchterlounie and Hinks, 2001).

The arguments may be best summed up as follows:

> *perception cannot occur in the absence of sensation, but the sense-data constitute only the 'raw material' from which our conscious awareness of objects is constructed. So, to the extent that we perceive the world as it really is, we do this indirectly, through analysing, interpreting and trying to make sense of sensations*. (Gross, 1987; in Auchterlounie and Hinks, 2001).

Some marketing authors (Jobber, 1998: 70; Kotler and Armstrong, 2001: 186) define the term perception as:

> *the complex process by which people select, organise, and interpret sensory information to form a meaningful picture of the world.*

Perception, among other factors (such as cognitions and learning), has been identified as a fundamental factor that influences behaviour in general and consumer behaviour in particular (Chisnall, 1985). Therefore, the importance of an understanding of the concept of perception cannot be overstated.

For humans, the process of learning involves receiving information through the five ‘avenues of the soul’ (the basic senses of sight, hearing, smell, touch and taste). Each person receives, organises and interprets the information by is in their own way.

The fundamental principle here is that humans can perceive the same stimuli differently, and this is attributed to three perceptual processes (Kotler and Armstrong, 2001), namely *selective attention*, *selective distortion*, and *selective retention*.

According to Blythe (1997), individual persons form their perceptions, as they are influenced by factors such as *subjectivity* – the unique worldview existing within an individual; *categorisation* – organising information received and pre-judging of events and products; *selectivity* – the extent to which the mind selects from the environment, and *expectations* – individuals tend to interpret later information in the context of their expectations.

In fact, Blythe’s four factors are all embodied in the three principles of perception put forward by the cited marketing authors (i.e. Jobber, 1998; Kotler and Armstrong, 2001).

The main characteristics of perception can be summed up as follows:

- perceptions are viewed as being *inherently subjective* (Chisnall, 1985; Auchterlounie and Hinks, 2001);
- individuals tend to interpret information in the context of their existing beliefs, attitudes, expectation and general disposition (Chisnall, 1985; Blythe, 1997; Foxall, *et al.* (1998); Auchterlounie and Hinks, 2001);
- the process of perception involves sensory stimulation (Chisnall, 1985; Gross, 1996; Foxall, *et al.*, 1998; Auchterlounie and Hinks, 2001).

An individual’s perception may, therefore change with the availability of additional information and/or with a development of personal needs. Some potential instances in which perception may be altered are: where an individual’s encounter with a particular product may have been disappointing; where the service quality offered by a company is seen as having deteriorated (falling below expectations); where there is a change in family needs; where there is an increase in disposable income; or an acquisition of more sophisticated tastes (Chisnall, 1985).

Some specific factors that may affect perception are:

- Personal span of apprehension – individuals often have to use selective attention due to numerous stimuli competing for attention (Chisnall, 1985);

- An individual's past history of experience – this influences the meaning of a particular percept (Chisnall, 1985; Blythe, 1997). As in the case of expectations, individuals also tend to interpret information in the context of their past experience. In fact, personal past experiences or the experience of others, can directly influence the formation of a customer's expectations of a company's offerings (Jobber, 1998; Gorst, 2000).

In the context of service quality and quality of goods, Parasuraman, *et al.* (1988) say that perceived quality is the consumer's judgment about an entity's overall excellence or superiority. As such, perceptions are not only dependent on the intrinsic qualities of a product or service, since consumers often base their evaluation on external factors such as their experiences, expectations, and associations. This reinforces the view by Chisnall (1985) which projects perception as a personal interpretation of the data about a specific product, which has managed to attain a level of significance in the consumer's mind. Perception is therefore about making judgments on the basis of external factors that have and do affect the way we 'see' things.

A consideration of perception in the service quality for a domestic property occupier may be put forward as follows. Based on the foregoing discussion, it seems then that external aspects such past experiences and expectations influence individual perceptions of the 'real world'. Whatever an individual has 'experienced' seems to leave an impression on the mind that will ultimately influence later judgments about the quality of goods and services. For instance then, an occupier may compare the extent and nature of repair works carried out to their property with those carried out to similar properties. If one *perceives* that a disparity exists in the extent and/or nature of repairs carried out, this may result in conflict between the insured and the insurer (Nicholas, *et al.*, 2001) and dissatisfaction may result.

Some argue that in perceptions about quality, the external factors that affect judgment may therefore be the key to measuring perceived quality. If these factors are identified, their effects may then be measured. Upon identification, it may possible to modify these factors, which may then result in a modification of a person's perception of quality (Auchterlounie and Hinks, 2001). It is not clear how such an approach may be applied in the issue of perceived service quality in the context of repair works of flood damaged domestic properties.

3.5.2 Process versus technical outcome quality

In a discussion of service quality and satisfaction, it is important to distinguish between two aspects of a service product, the outcome and the process. Service outcome refers to WHAT the service is aimed at delivering or achieving whereas the service process refers to HOW the service is delivered (Gabbott and Hogg, 1998). In the case of an insurance claim for the repair of flood damaged domestic property, the ultimate (technical) outcome is the completed/reinstated property, contents and/or buildings. This will encompass all the work carried out to restore the property to its pre-incident condition, such as cleaning, drying, 'deodorising', sanitation, replacement of goods, and repair of damaged property. The process aspect of the claim will encompass the responsiveness of service providers, the level of assurance and empathy offered to customers, during the period of getting the property back to a habitable condition.

In some services, the outcome is difficult for the purchaser to evaluate, even when the service has been delivered. The importance of the distinction between the process and outcome aspects of service products, for the service supplier, is that much of the industry competition is likely to be at the process level. Hence if reliability of the outcome is crucial, it is essential that organisations provide a core service while differentiating at the process level (Gabbott and Hogg, 1998).

3.5.3 Adopting the SERVQUAL framework

Over the years, despite wide application of the SERVQUAL framework in various studies, the instrument has not been without criticisms. However, its wide application to a variety of industries means that the instrument has been rigorously tested in different contexts. This was considered to be reason enough for the author to adopt it, albeit subject to modification and contextualisation. Although there is no study in the area of domestic property insurance where the framework was used, there are two studies that provided further inspiration for the adoption of elements of SERVQUAL.

One study which provided a foundation for the development of the research instrument for the current study was done by Stafford, *et al.* (1998). The study surveyed customers of four major USA insurance companies with a view to identify the best predictor(s) perceived service quality and satisfaction during auto casualty insurance claims. Stafford, *et al.* (1998) used confirmatory Factor Analysis to validate the existence of the five SERVQUAL dimensions. Then, they used the five composite dimension scores as predictor variable in multiple regression models. The findings showed that RELIABILITY was the best predictor of perceived service quality during the auto casualty insurance claims.

Table 3.2 shows a modified SERVQUAL framework from the work of Stafford, *et al.* (1998) in context of the auto casualty industry, which has several similarities with the domestic property insurance industry. Despite some marked contrasts, there are evidently several similarities between the auto casualty insurance claim and the domestic property flood damage insurance claim. The similarities include:

- Same service providing sector (insurance);
- Both involve repairs of private property;

Of all the widely used frameworks for satisfaction measurement, SERVQUAL (SERVice QUALity) seemed more suitable for the measurement of insured homeowners' satisfaction in domestic flood claims. SERVQUAL measures the difference between customers' expectations and their perceptions of the actual performance of a service provider.

Table 3.2 Modified SERVQUAL scale items

SERVQUAL DIMENSION	**Indicates the survey respondent's opinion about the insurer with regard to…**
Tangibles	• Modernness of offices (appropriate for insurance) • Visual appeal of offices (appropriate for insurance) • Neatness of employee appearance and the appeal of the employees' dress (appropriate for insurance) • Appropriateness of the office's appearance in relation to the type of services provided (appropriate for insurance)
Reliability	• Ability to fulfill promises in a timely manner (claims issues) • Sympathy offered by insurer when the customer has a problem (sympathy to claims/auto accident) • Dependability (can rely on employee) • Timeliness in providing services (processing claim check) • Accuracy of records (claim form, accident report)
Responsiveness	• Telling customers when services will be performed (claim, check) • Promptness of service (quickness of check) • Willingness of employees to help customers (deal with processing) • How busy the employees are, and how it affects their promptness in responding to customer requests (number of claims in process and how it affects claimants)
Assurance	• Trustworthiness of the insurer (trust of company) • How safe the customer feels in dealing with the insurer (safe feeling of customer) • Politeness of employees (courtesy in handling) • Does insurer provide support for employees so that they can perform their jobs well? (Are resources available for claim to be processed?)
Empathy	• The individual attention the insurer provides the customer (caring, empathetic nature regarding claim and flood accident) • The individual attention the employees provide the customer (issue regarding the specific claim) • Employee understanding of the customer's needs (understanding of auto accident situation) • Does the insurer have the customer's best interests at heart? (Does the company care that a fair amount in a timely manner will be paid?) • Convenience of operating hours (convenient to individual schedules)
	(Stafford, *et al.*, 1998)

Another influential publication for this study (Hoxley, 2000) used the SERVQUAL framework in the context of professional services in the construction industry. Unlike

Stafford, *et al.* (1998) who used confirmatory factor analysis, Hoxley (2000) used exploratory Factor Analysis to reduce the service quality variables into a small set of dimensions renamed as "what, how, when, and who." The study found that these four service quality dimensions to be important to UK construction clients who engaged construction professional services.

Although originally developed to measure service quality, it has also been modified and used to evaluate customers' perceptions of services in various industries (Mont and Plepys, 2003), which demonstrates the flexibility of the methodology. SERVQUAL has been applied in the context of the airline industry (Bitner and Hubbert, 1994); automobile insurance (Parasuraman *et al*., 1994; Stafford, *et al.*, 1998); computer manufacture (Parasuraman *et al*., 1994); public sector services (Wisniewski, 2001); life insurance (Parasuraman *et al*., 1994); retail (Parasuraman *et al*., 1994); and construction professional services (Hoxley, 2000).

Considering its wide application, SERVQUAL was deemed suitable for adoption in developing a survey for evaluating customer experience in flood damage repair works. However, due to the unique nature of domestic flood claims, the SERVQUAL scale was modified to provide a more comprehensive, appropriate and contextual measure of satisfaction (refer to section 4.5.3 for detailed discussion on the design of the questionnaire).

3.6 SUMMARY

Businesses generally aim at satisfying their customers' needs at a profit. Customers' needs depict a state where an individual has a perceived lack of something desirable or requisite. Needs differ from one individual to another; can compliment or be in conflict with each other; ought to be recognised or felt; and they may be satisfied simultaneously by a single product. In the context of this research, "customers' needs" are the wishes and requirements of homeowners (the insured) associated with the repair/reinstatement of their flood damaged domestic properties.

In order to retain customers, organisations not only need to understand their customers' needs; they also would benefit from a reliable capture of their customers' experience with the organisation's offerings. This is usually done through a measurement of customer satisfaction. The measurement of customer satisfaction is usually not an end in itself but rather part of an organisation's quest to improve their offerings (good or services).

4.1 INTRODUCTION

The research methodology is a vital part of the research project and essential to the research process. It provides the methodological approaches used in a study, shows how appropriate the chosen techniques were, and puts forward a justification of their use over other techniques. A methodology also provides a good link between the literature reviewed and the primary data collection.

This chapter describes the research methodology and philosophical underpinnings of the study. A brief discussion of research paradigms is presented followed by detailed treatment of the chosen methods and the design of the chosen research instruments. For convenience and clarity, the chapter is divided into two major sections (4.4 and 4.5), each detailing the methodology employed for the initial exploratory study (using qualitative methods) and the main empirical study (using quantitative techniques), respectively.

Section 4.4 presents a discussion on the qualitative research methods used, their choice and rationale for use, and the process of data collection. Section 4.5 includes a discussion of the development of the hypotheses as well as how decisions were made on the methods used, the pilot phase and lessons learnt from the piloting process.

4.2 RESEARCH PARADIGMS

Literature abounds on the philosophical debates as well as methods/techniques on how the social world can/should be investigated. The intention here is not to tread this well-worn path but rather to provide the context within which this research sits. However, before delving into the relevant debates, it is useful to provide working definitions for useful terms to ensure common ground.

The Encyclopædia Britannica (2007) defines the term **research** as “careful or diligent search”, “studious inquiry or examination; especially: investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or laws in the light of new facts, or practical application of such new or revised theories or laws” and/or “the collecting of information about a particular subject.” Others refer to this ‘voyage of discovery’ (Fellows and Lui, 2003) as an enquiry or investigation conducted in a careful, scientific and/or critical manner (Naoum, 1998).

Williams, *et al.*, (1996: 7) refer to research as a quest for answers that involves answers and understanding, adding that it involves “methodical investigations into a subject or problem.”

The term research generally implies an appropriate process and techniques are employed in the quest for solutions to problems or answers to questions posed in the inquiry. The investigative process often involves defining a research question and selection of the techniques that will help resolve the question. In fact, it may be argued that the credibility of the findings of any research is generally dependant on the conduct of the investigation (Williams et al., 1996). This leads to the next two terms for consideration: methods and methodology.

Methodology is defined by the Encyclopædia Britannica (2007, *emphasis supplied*) as “a body of **methods**, rules, and postulates employed by a discipline: a particular **procedure or set of procedures**” and/or “the analysis of the **principles** or **procedures** of inquiry in a particular field.” Such a definition firstly implies a close connection between methods/procedures and methodology, the former being a subset of the latter. Secondly, the definition also implies some guiding principles of how to investigate ‘truth’ in a particular field.

Paradigm is a commonly used term but not that easy to define. Encyclopædia Britannica (2007, *emphasis supplied*) defines a paradigm as:

> *a **philosophical** and **theoretical framework** of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated; broadly.*

Such a framework, within which scientific theories are constructed, is seen as useful in understanding phenomena in the human and social sciences. The rationale for such import attached to paradigms seems to stem from the view that “they advance assumptions about the social world, how science should be conducted, and what constitutes legitimate problems, solutions, and criteria of 'proof'" (Creswell, 1994: 1).

Although some proponents of the positivist[1] approach, the standard view of science, insist on an 'objective' and 'scientific' way to obtaining knowledge of the world around us, Robson (2002) argues that, in fact alternative approaches such as an 'interpretivist' approach to research does not imply less rigour and unscientific conduct. Robson (2002: 18) calls for a 'scientific attitude' for all engaged in research, regardless of their philosophical or paradigmatic assumptions. Such an attitude is deemed to exist when three basic principles are espoused during the design and conduct of the research, namely:

- **Systematically** – refers to the conduct of investigation, paying attention to what is being done, why it is being done and being explicit about the nature of observations, the circumstances of the observations and the role of the researcher in the same.

- **Sceptically** – the researcher subjecting his/her own ideas to possible disconfirmation, self-scrutiny and the scrutiny of others;

- **Ethically** – following a code of conduct which safeguards the interests of research participants and any who are affected by the research.

There has been much debate on the appropriateness of the use of terminology in the realm in methodology. Robson (2002: 5) for instance opts for the use of alternative terms, namely: "flexible designs", "fixed designs" and "mixed designs" arguing that, 'flexible designs', for instance is preferred to 'qualitative' because "such designs may well make use of methods which result in data in the form of numbers (quantitative) as well as the form of words; hence labelling them qualitative can be misleading."

[1] Positivism is the 'traditional' philosophical approach that posits that knowledge can be obtained in a 'scientific' and objective manner …

Robson (2002) tries to steer away from prescribing the need for researchers to get to grips with the paradigmatic issues of research, while at the same time warning novice researchers in particular to be aware of the complex and sensitive nature of social research. If one opts for a 'fixed design' approach to research, in particular,

> *[...] there are well established principles and procedures for carrying out a study of high quality which you ignore at your peril. (Robson, 2002)*

Although some still take the view that there is an ideological gulf between the two main paradigmatic approaches ('qualitative' and 'quantitative'), Robson (2002) argues that the distinction is more 'apparent' than 'real' and that research stands to benefit from the use of what Creswell (2003) refers to as 'mixed methods approaches.' Following this advice a two-phase sequential 'mixed methods approach' was used for this study. At the risk of over-simplifying paradigmatic issues, the two terms 'qualitative' (qual) and 'quantitative' (QUANT) methods have been loosely employed to characterise the two complimentary and sequential (qual-QUANT) phases of this study. In fact, Robson (2002) points out that the use of "qualitative/quantitative" terminology in labelling research designs is so entrenched that not to use them often risks miscommunication.

The methodology chapter is therefore discussed in two main sections (4.4 and 4.5) in order to ensure systematic approach to represent the conduct of the study and the research process. Similarly, the data collection and data analysis are also presented in two separate chapters of the thesis (Chapter 5 and Chapter 6, respectively). Chapter 7 is an extension of the findings from the quantitative data analysis.

For a general overview of the research process, including the interaction of the chosen methods with the rest of the research process, the reader is referred back to Figure 1.1 (page 9).

4.3 RESEARCH DESIGN: (qual-QUANT) MIXED METHODS APPROACH

The acronym qual-QUANT has been adopted to represent the two complimentary and sequential phases of the research, "qual" designates the small scale (initial) exploratory phase which employed methods geared at collecting ‘qualitative’ data, while “QUANT” designates the larger scale phase two survey which was designed to largely collect ‘quantitative’ data. This combination of methods that emphasise different aspects of data is herein referred to as Mixed Methods approach (*after* Creswell, 2003).

4.4 QUALITATIVE METHODS

This section describes the research approach employed in the first (exploratory) phase of the research. The choice and justification of the research method used, the process, collection and analysis of data collected during the exploratory phase of the research, are discussed. The research questions guiding this initial phase of the research are also considered.

During the first phase of the data collection of this study, a ‘flexible research design’ (Robson, 2002) was employed. Williams, *et al.* (1996) refer to this approach as ‘qualitative research’, an approach characterised by being primarily concerned with the *qualities* rather than *quantities* of phenomenon, the daily actions of people and meanings that people attach to their environments and relationships. Robson (2002) describes ‘flexible research design’ as an approach that evolves during data collection, involving the collection of generally non-numerical data (usually in the form of words).

Much of the work on customer satisfaction and service quality seems to follow what Robson (2002) refers to as “fixed” research design (quantitative approach) aimed at obtaining numerical measures. However, it was deemed essential to adopt a robust approach to studying human experiences, hence the use of a ‘mixed methods’ approach, employing both ‘qualitative’ and ‘quantitative methods.’ The qualitative phase of the study was based on in-depth interviews with various participants as described in subsequent sections of this chapter.

4.4.1 In-Depth Research Interviews

In investigating the needs of homeowners and factors that determine homeowners’ satisfaction in flood damage claims, the literature review yielded very limited information. Hence, an exploratory study was necessary to consolidate the findings of the literature review and identify the key issues and variables for further research. For this purpose, interviews were deemed the most suitable tools for gaining the relevant information. A rationale for this choice is provided in section 4.4.2 herein.

Interviews in social research serve to generate and maintain discourse with people on a topic or a range of topics. Interviews yield rich data, providing insights into people's experiences, opinions, aspirations, attitudes and feelings (May, 2001). Interviews come in various forms and can be conducted in different ways, each with its own merits and demerits. A single research project may employ more than one form of interview. May (2001) distinguishes four broad types of interviews, for classification purposes, namely:

i. **Structured interviews** – each person is asked the same question in the same way to allow for comparability. Structured interviews are associated with survey research and they rely on a uniform questionnaire as the data collection instrument. This type of interview is popular in telephone surveys for marketing purposes.

ii. **Semi-structured interviews** – this method uses elements of both structured and unstructured interviews. A set of specified questions is used but the researcher has a degree of latitude to probe beyond the answers, to seek clarification and elaboration, unlike in structured interviews.

iii. **Unstructured interviews** – these are distinguished by their open-ended nature, which is seen as providing an opportunity for the researcher to challenge his/her own preconceptions while permitting the interviewee to answer questions by drawing upon ideas familiar to them. The overall concern here is not to enable comparison of responses on a standardised interview schedule but rather seeking flexibility and the discovery of meaning.

iv. **Group interviews** – focus group interviews usually consist of 8-12 individuals discussing a particular topic while a moderator maintains focus on the issues of interest and promotes interaction. This is a valuable way of capturing group norms and dynamics surrounding an issue under investigation.

A comprehensive discussion of interview types, including their pros and cons can be found in any good book on qualitative research (Gillham, 2000, Robson, 2002, Minichiello *et al*., 1995, Arksey and Knight, 1999, Seale, 1999, Patton, 2002).

4.4.2 Choice and use of Interviews

Being flooded is a very unique, albeit unfortunate experience. Only a person who has been previously flooded can fully understand this experience. Having no experience in being flooded, the researcher felt some limitations in proceeding with a full-scale empirical study without coming as close as possible to those who have experienced flood events. Flexible design or 'qualitative' methods offered the best practical prospect of mitigating for this inadequacy and providing background information on the experiences of being flooded and going through an insurance claim.

Robson (2002) suggests that one of the instances in which interviews are suitable is where exploratory work is required prior to carrying out a quantitative study. The main data collection instrument for this research was a survey in order for quantitative statistical analyses to be conducted for the development of mathematical models and to explore differences and/or associations between variables. Interviews were therefore seen as a suitable way of exploring the subject and to capture the range of variables to be included in the subsequent survey.

Interviews were therefore chosen, among other things, to provide an opportunity to meet with flood victims, see their previously flooded properties, and possibly visualise the circumstances they experienced. Otherwise, if a researcher knows little or nothing about the social group they wish to investigate, the use of a survey on its own, for instance might be inappropriate because it is nearly impossible to "[…] formulate standardized questions that will get at the important aspects of the social group that are hidden" (Williams, 2003).

Interviews were chosen to help provide a 'historical' context of the flood events that were experienced by homeowners. In addition, the dearth of literature on the subject of homeowners' needs and satisfaction in flood claims necessitated the use of a 'flexible' qualitative research method such as interviewing. This would allow the researcher to capture all the salient issues surrounding the subject, which would not otherwise have been captured if ‘fixed’ design research methods were employed.

Gillham (2000) points out that interviews are suitable, *inter alia*, when the questions being posed by the researcher are largely ‘open’ and require an extended response with the possibility of prompts and probes for further clarification or additional information. At this stage, it was important to take advantage of this feature in the nature of qualitative research methods such as interviews; hence the decision to employ interviews for the initial data collection.

In addition, it was envisaged that if a robust survey instrument (questionnaire) would be designed to capture all the important information, then a more flexible method such as interviews would help to yield data that would consolidate the findings of the literature review and aid in the survey design.

4.4.3 Access to Interviewees

Interview participants for the study were ten homeowners and ten service providers (representatives of insurers, loss adjusters, and repair contractors). Homeowners had to be those with flood insurance cover, who had recently experienced flood damage to their domestic property. Homeowner interviewees were identified and contacted through either the National Flood Forum[2] or a particular insurance organisation, which made it easier to identify homeowners who had previously experienced flooding to their properties. Service provider representatives also needed to meet basic criteria, namely experience in dealing with flood insurance claims.

All the participants were chosen by convenience due to difficulty of obtaining volunteers by methods such as cold-calling. Despite the inevitable potential for bias as a result of participants having been chosen by organisations with potential interests, there was a deliberate attempt to ensure a mix of interviewees that had “good experiences”

[2] National Flood Forum is a not-for-profit organisation which offers advice and support to individuals and local communities affected by or at risk from flooding; it is run by people who have first-hand experience of the problem.

and those that had “bad experiences” during their reinstatement claim. This was not seen as a factor that would significantly influence the research’s findings, as the exploratory phase was not aimed at generating findings that could be generalised. On the contrary, the initial stage of the research was rather aimed at consolidating the findings of the literature review as well as identifying variables that should be considered in the design of the questionnaire survey.

4.4.4 Research Questions for the in-depth interviews

The exploratory phase of the research was designed to answer, through qualitative enquiry, the following research questions:

i) What are the requirements (needs) and expectations of homeowners during insurance claims for the repair of flood-damaged domestic property, with respect to the services provided by:

   a. Insurers?

   b. Loss adjusters?

   c. Repairers or restoration companies?

ii) How do homeowners evaluate their satisfaction with respect to the services they receive in insurance flood damage claims?

The aim was to explore the needs of homeowners in flood restoration of domestic property as well as the factors that determine homeowners’ satisfaction in flood restoration claims.

4.4.5 The Interview Methods

All participants were supplied with a detailed “participants information” which described aspects such as: the nature and purpose of the study, why participants were chosen, what would happen if they take part, potential benefits of taking part in the study, issues of confidentiality, information on organisations and funding of the research, and contact details for further information.

In order to enlist honest responses from participants, assurances were made by the interviewer that strict confidentiality and anonymity would be maintained at all times. In addition, the collected information would not be divulged at anytime to other personnel, except those directly involved in the study and no information that directly identifies the interviewee would be declared.

In compliance with the ethics regulations, interviewees were provided with an informed consent form to complete and sign, as confirmation that they consent to be interviewed and to the information being used for educational purposes.

4.4.5.1 Face-to-face and Telephone Interviews

Both face-to-face interviews and telephone interviews were used in the exploratory phase of the research. In each case, the interviews took the semi-structured format.

Face-to-face interviews were initially the preferred method but proved very costly and demanding in terms of time, cost and effort. Hence the telephone interviewing was seen as a complimenting option that would meet the desired goals.

Telephone interviews are often viewed in the ‘survey’ context; however, they share many advantages of face-to-face interviewing, namely a high response rate, correction of obvious misunderstandings and possible use of probes. (Robson, 2002). Telephone interviewing was chosen for particularly the following potential benefits:

- A lower tendency towards socially desirable responses; respondents tend to be more open on the other end of the phone.
- It was possible to interview participants from diverse geographical regions at lower costs in terms of time, money and effort.

All the interviews were recorded using a ‘Dictaphone’, with each interview lasting an average of forty-five minutes, depending on time available, interviewees’ interest and response. The telephone interviews were recorded using a simple and cheap ‘telephone recording adaptor’ used in conjunction with the Dictaphone. The quality of the recorded interviews was acceptable as a basis for analysis.

4.5 QUANTITATIVE METHODS

This section describes the research methodology that was used for the main data collection phase of the study. The purpose was to investigate the issues that were set forth in the research aim and objectives. The choice and justification of the methods used, the design of the research instrument, sample size and determination, the process of distribution and data collection, are all discussed. The second phase of the study utilised a relational fixed research design with the cross sectional data being collected from primary sources.

Ultimately, the research was intended to examine relationships between variables and to model homeowner satisfaction within insurance claims for the repair of flood-damaged property. Therefore, it was important that numerical measures rather than qualitative measures be obtained, so as to yield objective quantifiable data that can be used for modelling purposes.

4.5.1 Development of the research hypotheses

In quantitative or fixed design studies, researchers usually make use of research questions and hypotheses to shape their focus and purpose. Creswell (2003) suggests that research questions, which are interrogative statements, are commonly used in social science to investigate a research problem, particularly in survey studies. Hypotheses, which are predictions that a researcher makes about the relationship among variables enables drawing of inferences about the population from a study of a sample.

Therefore a set of hypotheses was developed based on the theoretical framework chosen for this study. The development of the hypotheses was informed by the literature review, the chosen aim and objectives of the study as well as the researcher's nuances obtained from the exploratory phase of the data collection stage.

The hypotheses focus on homeowners' experiences with their service providers and their perception of the services they received during the repair of their flood damaged domestic property. Each hypothesis, where applicable, contains both dependent and independent variable(s) for which data was collected using a postal questionnaire survey discussed in this chapter.

4.5.1.1 Hypotheses for the Quantitative Research

In order for the study to be more meaningful, a comparison of various groups and an investigation of potential relationships between variables were necessary. Therefore, the following key hypotheses were developed and further tested using appropriate statistical techniques that are discussed in Chapter 6 and Chapter 7:

H_1: The items that make up each of the three scales used to evaluate service quality of the three key services received by homeowners during flood-damage insurance claims can be reduced to a small set of underlying factors.

This hypothesis was aimed at reducing the multivariate scales used to measure service quality with Insurers, Loss adjusters and contractors, from numerous variables (25, 27 and 33 respectively) into a few underlying factors. Using exploratory principal components factor analysis, this exercise was intended to build on previous studies such as Parasuraman (1988) which found five underlying service quality factors (*tangibles, reliability, responsiveness, assurance and empathy*). Reducing the numerous variables into a few underlying factors would lead to an examination of how much of the variance in overall homeowner satisfaction can be explained by the resulting factors. This would consequently determine the best predictor of homeowner satisfaction with the various services provided to homeowners during an insurance claim for the repair of flood-damaged property.

H_2: The same (or similar) service quality variables will predict homeowner satisfaction with each of the three service providers (Insurers, Loss Adjusters and contractors).

The hypothesis was intended to investigate and identify a few key antecedents of homeowner satisfaction out of the various dimensions of service quality scales used to evaluate homeowners' perceptions to the services they received from insurance companies, loss adjusting forms and contractors, during the repair of the flood-damaged property. As discussed in sections 7.4.3, 7.4.4 and 7.4.5, an attempt to reduce each of the scales into a few underlying factors using principal component factor analysis revealed only one meaningful factor in each of the three scales (insurance, loss adjusting and contractor services). It was deemed important for this research to provide practitioners with an indicator of the key items that make the most significant contribution to homeowner satisfaction with each of the three individual service providers. For this purpose, stepwise multiple regression analysis (MRA) was chosen as the most suitable data analysis technique.

H_3: Overall homeowner satisfaction with the services received during insurance claims for the repair of flood-damaged property can be measured by multiple satisfaction variables, evaluating the process, financial aspects and the completed repair works.

This hypothesis was designed to provide a rationale for the development of the dependent variable (homeowner satisfaction) to be used in any subsequent analyses, particularly regression model development. As discussed in Chapter 4 (section 4.5.3, from page 99), data on homeowner satisfaction had been collected on several variables. It was necessary to explore these variables to discover if they were actually measuring the same or different underlying processes. For this purpose, factor analysis, a data reduction technique was used. If variables were found to be measuring the same underlying processes, it would be necessary to either use the most eligible variable or consolidate the relevant variables into composite variables and thereby have fewer variables overall.

H_4: Of the three main service providers (insurers, loss adjusters and contractors) in insurance claims for the repair of flood-damaged property, homeowner satisfaction with the performance of loss adjusting firms will be the best predictor of overall homeowner satisfaction.

This hypothesis was designed to examine how much of the variance in overall homeowner satisfaction with the process can be explained by the overall homeowners' satisfaction with the three service providers - insurance company, loss adjuster and the contractors. In other words, can overall homeowner satisfaction be predicted based on the satisfaction of a homeowner with the individual services provided by the insurance company, loss adjuster and the contractors, respectively? This is important for the damage management industry because it will highlight where most of the effort of service providers should go in order to ensure homeowner satisfaction.

The dependent variable (DV) in the hypothesis is “Overall Homeowner Satisfaction” and the three independent variables are satisfaction with insurance company (oSAT_Insurer), satisfaction with Loss Adjuster (oSAT_Loss Adjuster) and satisfaction with the contractors (oSAT_Contractor).

H_5: There is a significant difference in mean scores of homeowner satisfaction of flood damage repairs for claims which took less than 6months, 6-11months and 12months and above to settle.

This hypothesis examines the relationship between two variables, namely: **homeowner satisfaction** during a flood claim and the **time taken** from the flood event to completion of the repair works and settling of the insurance claim. It is here hypothesised that the longer it takes for a homeowner to have their property reinstated back to its pre-flood or habitable state, the less satisfied they will be. If this is the case, then there would be implications for damage management professionals to ensure that the duration of the repair process is kept to a minimum. It is worth noting that flood damage claims typically take a long time depending on the extent of the water damage as the repair works cannot commence unless the property has been adequately cleaned, sanitised and sufficiently dried.

This hypothesis was tested using one-way between groups Analysis of Variance (ANOVA) which compares the variability in scores between the different groups (believed to be due to the independent variable) with the variability within each of the groups (believed to be due to chance).

4.5.2 Choice and use of questionnaires

The ability to weigh up the practical value of methodological limitations of particular methods in research is an important skill for researchers (May, 2001). In this study, the chosen methods were carefully considered for their suitability to the task at hand and it was a case of using what was deemed to be “the best tools for the job.”

There is no single comprehensive rule for when to use a questionnaire in research. The choice and use of questionnaires in quantitative research designs is usually based on a variety of factors such as the type of information to be gathered and the available resources for the study. In this particular study, questionnaires were deemed particularly suitable for this phase of the research for the following reasons:

- The need to collect lots of data about many different individuals in diverse geographical regions which could then be used to generalise as far as possible to the wider population.

- The need to protect the privacy of the participants to enhance participants' likelihood of responding honestly (if at all), due to the relative sensitivity of the topic.

- The adoption of elements of the SERVQUAL framework in questionnaire instrument meant that the data required needed to be collected by questionnaire as per precedence.

4.5.2.1 Disadvantages of self-completion questionnaires

Postal questionnaires surveys have limitations that have to be considered before they are used. Some limitations of using questionnaires as outlined by Robson (2002) are outlined below:

- *Data are affected by respondents' characteristics, such as their memory, knowledge, experience, motivation and personality*. This was not seen as a problem because the study was aimed at evaluating people's experience based on their memory of the service they received. The exploratory stage of the research established that homeowners generally remember the issues associated with flooding to their property.

- *Typically a low response, which begs the question regarding the characteristics of non-respondents and whether the sample is really representative*. Low response rates are a real problem with construction related studies averaging 15-20% response. As discussed later in this chapter (refer to section 6.2.3 from page 136), several measures were put in place to enhance the response rate, although this did not result in greater success.

- *Ambiguities in, and misunderstandings of, the survey questions may not be detected.* A pilot study was conducted to eliminate ambiguity and clarify any misunderstanding.

Williams (2003) argues that surveys are inappropriate in many instances for at least three reasons, namely: the researcher knows little about the social group being investigated; surveys offer limited scope for flexibility to capture data on variables not previously identified; and surveys may pose cultural and ethical problems due to a lack of shared meanings of terms between the researcher and those being researched. This study adopted a 'flexible design' (Robson, 2002) or 'interpretivist' (Williams, 2003) approach for the first phase in order to mitigate the above limitations of the survey employed in the second phase of the study.

4.5.2.2 Advantages of self-completion questionnaires

One important benefit of employing self-completion questionnaires is that they allow for anonymity, which can encourage respondents to be frank on sensitive issues (Robson, 2002). Anonymity was deemed important in this study for several reasons:

- To enable respondents to feel free to give an honest evaluation of the services they received during their insurance claim for the repair of flood damaged property;

- To allay any potential fears by homeowners that their property would be identified with flooding and thereby enhance response rate.

The questionnaire option was also attractive due to its potential efficiency in providing large amounts of data, from geographically dispersed respondents, at relatively low cost (Robson, 2002).

4.5.3 Inspiration of the Questionnaire

As previously indicated, the questionnaire incorporated some relevant elements of the 22 item SERVQUAL scale (Parasuraman, *et al.*, 1988) . However, the questionnaire departed from the traditional SERVQUAL approach of measuring gaps, i.e. asking respondents to rate their expectations and perceptions on two separate occasions.

Rather, following Hoxley (2000), each item/variable was rated by respondents only once, capturing both the expectation and perceived service quality elements at the same time, on a scale from zero to six, with six being the highest expectation/perception level.

In addition, seven-point overall measures of service quality and feelings of customer experience were also included. Other pertinent personal demographic data of respondents and claim-specific information were also collected for use as independent variables for consideration in various analyses.

The adopted elements of the SERVQUAL framework were adapted to suit the specific purpose and context of home insurance claims, and in particular the three service types – insurance company service, loss adjuster's service and contractors' services. This also accounted for special features harnessed from the findings from the in-depth interviews.

Respondents were required to indicate on a scale from one (strongly disagree) to seven (strongly agree) the extent to which they (dis)agreed, with each statement pertaining to each of the three principal parties involved in their most recent flood damage claim.

4.5.4 The Questionnaire and Covering Letter

A covering letter (refer to Appendix H from page 293) was designed to accompany the questionnaire as advised in most texts on postal questionnaires. The letter contained the following key features:

- A clear invitation to homeowners to take part in the survey;
- A declared purpose for which the survey was being carried out, including how this may benefit homeowners and the wider society;
- The researcher's affiliation and the parties interested in the outcomes of research;
- Important criteria on who should complete the survey;
- When and how to return the questionnaire; and
- An undertaking on confidentiality and adherence to academic ethics standards;

- The researcher's contact details for any additional information or further clarification.

The questionnaire was designed to be easy to complete while capturing all the issues identified as being important. As shown in Appendix I (from page 294), the questionnaire had six distinct sections as follows:

1. **Section 1: Background Information** - The aim here was to capture background information regarding the flood event itself (flood characteristics), homeowners' experience in the aftermath of the event (evacuation, alternative accommodation), flood claim characteristics (named insurers, policy details, size of contents/buildings claim, time taken to settle the claim), property and occupants' characteristics, tenure of the property and the various parties involved in the claim. These were deemed important for purpose of creating sub-categories in the data and allowing for useful comparisons on key variables such as homeowner satisfaction by time taken to settle the claim (question 1.16). The same rationale was used for inclusion of section 6 of the questionnaire (refer to discussion on page 103).
2. **Section 2: The Insurance Company's Services** – This section provided homeowners with the opportunity to evaluate their most recent claim experience following flood damage to their domestic property. In the first sub-section entitled "**Expectations versus your perceptions of the service**", respondents were expected, on a scale of 0-6 (0=Lower than I expected and 6=Higher than I expected), to rate a number of aspects of the services they received from their Insurance company (Insurer) in comparison to their original expectations of what the service would be. Such an approach was based on elements of the SERVQUAL framework hence the five categories of this section namely: tangibles, reliability, responsiveness, assurance and empathy. The last sub-section (**Satisfaction with the insurance company's services**) of section 2 of the questionnaire, the questionnaire was designed to measure respondents' satisfaction with the services received from their insurer on five aspects of the service (Questions 2.26-2.30). The last two questions (2.31 and 2.32) were aimed at evaluating respondents overall satisfaction with their insurance company's

overall performance and their perceptions of the overall level of service quality of the service provided by the insurance company during the repair of their property, respectively.

3. **Section 3: The Loss Adjusters' Services** – As in section 2, homeowners were to evaluate their most recent claim experience following flood damage to their domestic property. In the first sub-section entitled "**Expectations versus your perceptions of the service**", respondents were expected, on a scale of 0-6 (0=Lower than I expected and 6=Higher than I expected), to rate a number of aspects of the services they received from their Loss Adjusters (if applicable) in comparison to their original expectations of what the service would be. This sub-section was also inspired by the SERVQUAL framework hence the five categories of this section namely: tangibles, reliability, responsiveness, assurance and empathy. The last sub-section (**Satisfaction with the Loss Adjuster's services**) of section 3 of the questionnaire, the questionnaire was designed to measure respondents' satisfaction with the services received from their Loss Adjuster on five aspects of the service (Questions 3.28-3.32). The last two questions (3.33 and 3.34) in this section were aimed at evaluating respondents overall satisfaction with their Loss Adjusters' overall performance and their perceptions of the overall level of service quality of the service provided by the Loss Adjusting company during the repair of their property, respectively.

4. **Section 4: The Repairer/Contractor's Services** – Similar to the previous two sections of the questionnaire (sections 2 and 3), the first sub-section entitled "**Expectations versus your perceptions of the service**", respondents were expected, on a scale of 0-6 (0=Lower than I expected and 6=Higher than I expected), to rate a number of aspects of the services they received from their repairer/contractor in comparison to their original expectations of what the service would be. This part was also adapted from the SERVQUAL framework hence the five categories of this section namely: tangibles, reliability, responsiveness, assurance and empathy. The last sub-section (**Satisfaction with the Repairer/Contractor's services**) of section 4 of the questionnaire, the questionnaire was designed to measure respondents' satisfaction with the services

received from their repairer/contractor on five aspects of the service (Questions 4.26-4.30). The last two questions (4.31 and 4.32) were aimed at evaluating respondents' overall satisfaction with their repairer/contractor's overall performance and their perceptions of the overall level of service quality of the service provided by the repairing company during the reinstatement of their property, respectively.

5. **Section 5: Overall satisfaction and service quality during your recent claim** – This section provided homeowners with the opportunity to evaluate their overall experience as customers but with reference to the entire claim/process, not necessarily with the reference to any specific service provider. The three **overall satisfaction** measures (questions 5.4-5.6) were drawn from literature and measured homeowner overall satisfaction with the **process** of handling their claim, the **financial settlement** of your claim, **finished repair/restoration work** on their property. Respondents were expected to rate their satisfaction on these three variables on a scale of 0-6, where 0=very dissatisfied and 6=very satisfied. The last question in the section 5 was aimed at collecting some qualitative data that is often missing in many surveys. This would be used to understand respondents' responses on the various 'non-flexible' questions in the questionnaire.

6. **Section 6: About You** – in this last section of the questionnaire, respondents were required to provide details about themselves for the purpose of developing sub-sets of respondents to allow for relevant comparisons of key variables. The questionnaire emphasised the pledge of anonymity once again insisting that respondents' names were not required and hence they could afford to be candid as their responses without any risk of their identity in any way be associated with their response. This section was strategically placed at the end of the questionnaire so that even if respondents didn't complete it due to being bored or fed up they would hopefully already have completed the most important aspects of the questionnaire by then.

4.5.5 Piloting the questionnaire

A good survey instrument does not just happen; it is a result of design and re-designs in order to improve both appearance and content. Often, questionnaires have to be tried out, re-designed and then tried out again, as many times as necessary so as to ensure that the instrument will achieve its intended purpose (Oppenheim, 1992). This process is referred to as pilot work or piloting the questionnaire.

Piloting the questionnaire involves undertaking a small scale version of the survey before committing oneself to the main survey. Piloting is aimed at ascertaining whether or not the questions are understandable and unambiguous, instrument development is on the 'right lines', and whether or not the instrument is capturing phenomenon sufficiently well for meaningful data to be collected.

Piloting the questionnaire therefore provides the researcher with an opportunity to "revise the design, to sharpen up the theoretical framework, develop the research questions, rethink the sampling strategy – and perhaps to do a further pilot" (Robson, 2002: 97).

Robson (2002) supports this idea urging researchers to always pilot 'fixed design' studies. Similarly, Oppenheim (1992: 48) contends that nearly anything about social survey can and should be piloted, from the method of drawing the sample to the type of paper to be used, arguing that:

> *It is dangerous to assume that we know in advance how respondents or fieldworkers will react, and it is a mistake to ask an 'expert'. […] when in doubt – and especially when not in doubt! – do a pilot run.*

Oppenheim (1992) discusses at length the pitfalls of using experts as a shortcut urging that a researcher will learn more from doing pilot work, which may well result in new and better questions as well as reformulation of question objectives.

The questionnaire was first subjected to scrutiny by a panel of four professionals, one academic (the research supervisor), two industry practitioners (an insurance professional and a repair contractor's representative) and a representative of a community flood action group. This yielded a robust review of the questionnaire to ensure it was easy to understand and would capture all the important variables during the data collection.

However, in keeping with the guidance given by Oppenheim (1992), not to rely on experts for the pilot work, the questionnaire was piloted to twelve homeowners who had previously experienced flood damage to their property and who met all the criteria set for participants who would ultimately be surveyed for this study.

4.5.6 Learning from Piloting the questionnaire

The pilot questionnaire was administered to homeowners in the Worcester area, which was chosen primarily based on pragmatic considerations, in particular the perceived ease of access to potential respondents. In all, twelve postal questionnaires were administered all of which were completed and returned.

A covering letter and Pilot Questionnaire feedback form were both used to accompany every pilot questionnaire (refer to Appendix G from page 289). Respondents were requested to evaluate the pilot questionnaire after completing it, in terms of the layout, question design and content. This way, respondents not only completed the pilot questionnaire but also provided valuable feedback to help improve the questionnaire before sending it out to a larger section of the community in the main survey.

The questionnaires were analysed for any potential problems due to lack of clarity, important omissions, and any other weaknesses where improvements could be made. In addition the feedback from the evaluation form was also collated and analysed through simple content analysis. Based on the analysis, several wording amendments were made to improve clarity. A number of new questions were also introduced to cover aspects that were not considered in the pilot questionnaire, a clear testimony to the value of piloting a questionnaire before the main data collection stage.

The modified questionnaire was then used as the basis of the major survey. The pilot questionnaires were not only used as the basis of modifying the final questionnaire, but were also incorporated in the main data analysis together with the rest of the questionnaires received from the main survey. Any new questions that were added to the final questionnaire were treated as missing values in the pilot questionnaire responses.

This decision was taken for pragmatic reasons, in view of the minimal changes that were made to the pilot questionnaire and the need to increase the number of useable completed questionnaires.

The data collection and analysis is discussed in the next two chapters of this thesis, starting with the exploratory study followed by the main survey.

4.6 SUMMARY

The methodology is an essential element of any research project as it provides the framework of the study and an account of the conduct of the investigation. The suitability of the chosen methods and their associated limitations can therefore be evaluated by readers. In this study, a mixed methods (qual-QUANT) approach was used, starting with exploratory qualitative in-depth interviews followed by survey for the main study. In this way, the study could benefit from the strengths of methods from both research paradigms as advocated by several proponents of mixed design.

5.1 INTRODUCTION

This chapter presents the analysis and findings of the in-depth interview data collected as described in Chapter 4 (refer to section 4.4). Some wider issues of controversy in qualitative research are discussed, particularly the application of validity, reliability and generalisability. In addition, a discussion of how the interview data was collected and transcribed for analysis. The coding of the data as well as its analysis using NVivo, an example of computer assisted qualitative data analysis, is also presented.

The findings from the data analysis are presented with respect to homeowners' experience of flooding, their needs, expectations and satisfaction with insurance claim services, in the aftermath of a flood event. An understanding of their customers' experiences and requirements may be useful to service providers dealing with flood recovery, enabling them to formulate effective strategies to improve customer satisfaction.

5.2 ISSUES IN QUALITATIVE DATA ANALYSIS

Research findings are generally accepted if they are seen to have been the result of carefully conducted studies, which can be trusted. This is particularly so in the positivist school of thought, where validity and reliability are essential elements of the research process. However, these principles are not so straightforward in qualitative research methods such as interviews (Aerksey and Knight, 1999).

For many years, a debate has raged on the usefulness of the concepts of validity and reliability in the realm of qualitative research (Kelle & Laurie, 1995). Inevitably, there seems to be no consensus on the subject, even though some researchers suggest that the terms validity and reliability are inappropriate in qualitative research, in favour of the use of terms such as "trustworthiness", "rigorousness", or "quality" of the data. However, it has been stressed that it is important for qualitative research and data analysis to be conducted thoroughly and in a transparent manner (Miles & Huberman, 1994; Creswell, 1998; Seale, 1999); Crawford, *et al.*, 2000.

5.2.1 Validity of interview data

Aerksey and Knight (1999) describe validity as the extent to which the research investigates what it claims to be investigating. It is even argued that threats to validity in research are numerous and that researchers often just have to live with some of these threats! This reasoning is based on the view that "flawed information is better than none and that there is sometimes little that can be done about some threats" (Aerksey and Knight, 1999).

Attempts were made to enhance validity of the findings of the interview research by:

- Choosing a sample of interviewee participants that is robust enough for an exploratory study.
- The use of interview techniques that build rapport, trust and openness, giving the interviewees sufficient room to express their perspectives.
- Designing a comprehensive set of questions that covers issues raised in the research questions.
- Probing, cross checking and the use of prompts to enable interviewees to illustrate, clarify, and expand their responses.

5.2.2 Reliability of interview data

Apart from the issue of validity, reliability is another term for some contested ground in research, particularly when applied to flexible design methods. Reliability is taken to be the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions. Some qualitative researchers argue that consistency, trustworthy and authenticity should be the crucial issues of consideration rather than reliability, which quantitative research presents as a central (Silverman, 1993).

In qualitative research, reliability is often associated with checking the straight of the data, with concerns of whether or not, and under what circumstances, the researcher would expect to obtain the same findings if the research was replicated (Minichiello, *et* *al.*, 1995). It has been pointed out that qualitative research largely concerns itself with providing valid understandings of the meanings that subjects attach to behaviour, events, attitudes (Minichiello, *et al.*, 1995). This study therefore aimed at understanding homeowners' experience with service providers in flood damage claims, as well as to explore the importance homeowners attach to various service quality variables in determining satisfaction.

5.2.3 Generalisability

One of the most significant limitations and source of criticism for qualitative research methods such as interviews is that the results generated are not generalizable to a population. However, generalisability is often not the main goal of qualitative researchers. It has been argued that interviews maximize contextual realism at the expense of sacrificing some degree of generalizability and control (McGrath, 1982). Given the fact that the constructs, dimensions, and variables on this research topic did not seem to be well developed, employing interviews for the preliminary data collection stage of the research appeared to be the most suitable solution.

5.3 DATA COLLECTION

As discussed in Chapter 4 (refer to section 4.4), semi-structured interviews were chosen for collecting data for this phase of the study. This section discusses the protocol used to conduct the interviews, the key questions put to the participants and the data transcription process, precursors to the data analysis process.

A total of twenty participants were interviewed as part of this phase of the research. As indicated in Table 5.1, ten homeowners and ten service providers. The rationale for interviewing both homeowners and service providers was to enable comparison of their perceptions on various service issues.

Table 5.1 Categories of Interviewees

	Description of Interviewees	**ACTUAL SAMPLE (No.)**
1	Homeowners	10
2	Insurance company representatives	2
3	Loss adjusters	3
4	Contractors	5
	Total	**20**

5.3.1 Conducting the Interviews

The in-depth research interviews were all recorded on tape, subject to the interviewees' written consent being obtained prior to the interviews. However, any preliminary discussions such as informal conversations with the interviewees and collecting data on the interviewees' personal profile were not recorded on tape. Table 5.2 presents the interview sequence/format was used as a guide in conducting the interviews:

Table 5.2 Interview sequence/format

	STEP	**DESCRIPTION**
1	**Introduction**	Introduction, purpose and confidentiality statements, confirm permission to record interview.
2	**"Warm up"**	Easy questions at beginning to build rapport
3	**Main body of interview**	Key issues in a logical sequence
4	**Cool off**	Diffuse potential tension at end with simple questions
5	**Closure**	"Thank you for your time and participation"

5.3.2 The Interview Questions

The research interviews took the semi-structured format. To start with, general information was collected from interviewees on the personal details and background questions relating to the interviewee's experience with the flood event (refer to Appendix A). Some of this background information is summarised later on in Table 5.3.

Homeowners were initially asked to describe their experience of flooding to their domestic properties. Then homeowners were asked a number of specific questions relating to their needs and expectations, dissatisfaction and satisfaction determinants in the context of flood claims. Refer to Appendix C for the interview agenda used with homeowners.

Interviewees from service companies, i.e. Insurers, Loss Adjusters, Repairers and Restorers were asked for what they perceived as the needs and expectations of homeowners, and the factors that determine homeowners' satisfaction in flood claims. Refer to Appendices D, E and F for the interview agenda used with service companies.

Interviewees were allowed to discuss the questions and issues from their perspectives so as to enhance validity. Wherever necessary, clarification was sought to ensure that the appropriate meaning was ascribed to issues as intended by the interviewees.

5.3.3 Transcription of the Research Interviews

Before the collected data could be analyzed, it had to be prepared. The preparation process involved typing notes, transcribing interviews, and entering other data from which the researcher will be working (Merriam, 2001). This overall process of data preparation was done parallel to interviewing in order to take advantage of the fresh recollections of the conversations as a way of enhancing the transcription process. For instance, it was found much easier to listen to and hear micro-tape recording soon after the recorded conversation than several months later.

Transcription involved playing the recorded interviews and typing what was said verbatim in a word processing package. Often, a standard word processor such as Microsoft Word is the best tool to use in creating clean records from which to work. Usually, the data prepared in this fashion can be used in conjunction with the program chosen to assist in the analysis phase. In order to capture all the information, the tapes had to be played and replayed several times due to occasional poor quality sections of some tapes caused by factors such as interferences during interviewing and unfamiliar accents of interviewees. Once all the taped interview discourses were transcribed, all the transcriptions were checked to ensure clarity and to eliminate any potential errors. Overall, the transcripts represented a reliable account of the interview conversations and hence were used in the subsequent analysis.

5.3.4 Profile of Interviewees

Interviews were conducted with ten insured homeowners who have previously experienced flood damage to their property, chosen by convenience as well as pragmatic considerations such as access to subjects. Table 5.3 shows the demographic characteristics of the insured homeowners interviewed for this phase of the research.

Table 5.3 Demographic data of Interviewed Homeowners

VARIABLE		**ACTUAL SAMPLE (No.) (N=10)**
Gender	Female	6
	Male	4
Age	40 – 59	2
	60 and over	8
Ethnicity	White	10
Marital Status	Married	8
	Widowed	1
	Divorced/Separated	1
Disability/illness	No Long-term illness/disability	8
	Long-term illness	2
Geographical location	Shropshire	1
	Worcestershire	4
	Cornwall	1
	Lancashire	1
	Derbyshire	1
	Surrey	1
	W. Yorkshire	1
Dwelling Type	Detached house/Bungalow	1
	Semi-detached house or Cottage	2
	Row/terrace house or cottage	6
	Other (Double fronted Town House)	1
Property Value	Up to £250,000	8
	Over £250,000	2

In order to minimise the potential for bias, participants were selected from geographical dispersed areas to ensure representation of a variety of flooding contexts. All the participants were from the white ethnic background, with four being male and the other six female. The majority of homeowners (8 out of 10) were aged 60 and above, were married, had no disabilities or long-term illnesses and owned properties worth up to £250,000.

5.4 DATA ANALYSIS PROCESS

Qualitative research often yields enormous volumes of data, which is usually in a textual format and can be challenging to analyse. Typically making sense of such data involves "reducing the volume of raw information, sifting trivia from significance, identifying significant patterns, and constructing a framework for communicating the essence of what the data reveal" (Patton, 2002, p. 432). The use of computer software in qualitative research is therefore not uncommon and is fast becoming more popular partly due to the capability of computers to deal with and organise massive amounts of data, as well as facilitating communication among researchers in a research team (Merriam, 2002). Computer assisted qualitative data analysis software (CAQDAS) have been classified into three basic types (Fielding, (1994), namely:

i) *Text retrieval* software such as 'Metamorph', 'The Text Collector', 'WordCruncher', 'ZyINDEX' and 'Sonar Professional'.

ii) *Code and retrieve text* software such as 'HyperQual', 'Kwalitan', 'QUALPRO', and 'The Ethnograph'.

iii) *Theory-building* software such as AQUAD, ATLAS-ti, HyperRESEARCH, and NUDIST, and NVivo.

At first glance, the number of the interviews conducted during this phase of the research does not seem to necessitate the use of 'sophisticated' and expensive software for analysis. However, once the data was transcribed, it soon became obvious that the volume of textual data required some form of computer software to process. Other factors such as the need to enhance rigour (Richards and Richards, 1991) and trustworthiness also highlighted the need to explore all the possible options of

CAQDAS available. NVivo[1] was chosen over other packages primarily because of availability of local expertise in the use of the software for qualitative research which meant the researcher would receive training and support in its use.

5.4.1 Data Analysis Using NUD*IST Vivo (Nvivo)

The transcribed data was then 'entered' into NVivo in the form of interview documents for further processing and analysis. NVivo is fairly simple to use and has the flexibility of allowing documents (in rich text format) to be imported directly from a word processing package. These documents (interview transcripts) can then be coded[2] easily on screen. While coding the data, "coding stripes" can be made visible in the margins of documents so that the researcher can see, at a glance, which codes have been assigned to what portion of the transcript. In addition, NVivo enables the researcher to write memos about particular aspects of documents, which can then be linked to the relevant passages in different documents.

5.4.2 Coding the Interview data

In NVivo, the process of coding involves marking passages of text in a project's documents with nodes. A given node is said to code those passages; Figure 5.1 shows an example of nodes associated with 'homeowners' needs' onto which passages have been coded. Documents hold the basic information in a project, whereas nodes represent all the ideas, concepts, categories, people, things and results in the project. Coding is therefore a way of recording where those ideas occur within the data for ease of retrieval, further collation or analysis.

NVivo allows the researcher to code as many passages as memory will allow; so that coding can be very dense and comprehensive if desired. In addition since coding is

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[1] NVivo (NUD.IST Vivo) is a software package used for qualitative data analysis designed by Qualitative Solutions and Research Pty. Ltd. (QSR). All references NVivo in this research specifically refer to the NVivo 1.1 version of the software.

[2] In NVivo "coding" is the process of marking passages of text in a project's documents with nodes (all the ideas, concepts, categories, people, things and results in the project). It is a way of recording where those ideas, etc. occur in or refer to the project's information.

applied character by character, the passages being coded can be selected with complete precision.

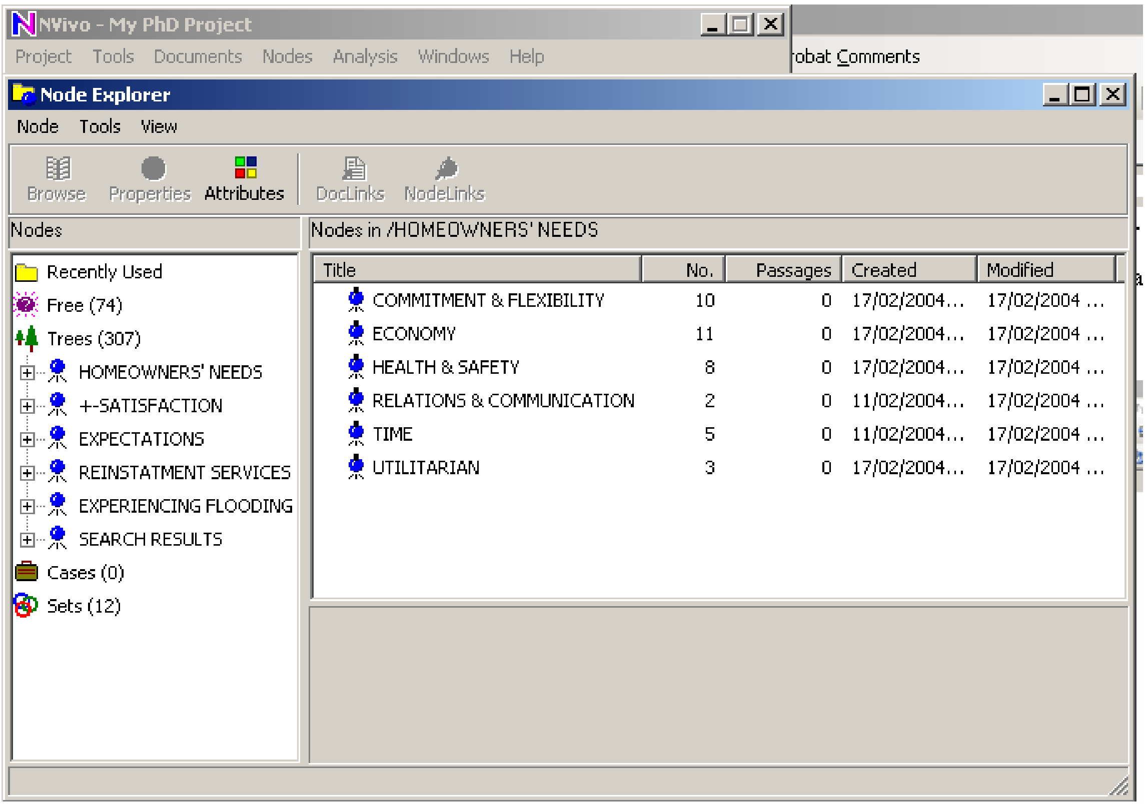

Figure 5.1 Tree nodes in NVivo

5.5 FINDINGS OF EXPLORATORY INTERVIEWS

The analysis of the interview data revealed several factors that were perceived to be important requirements of homeowners in a flood claim. Clearly, each homeowner had their own unique experience that may have been influenced by any of several factors. It emerged that a number of factors played a significant role in the perceptions of homeowners of the services they received during flood reinstatement. The data analysis concentrated on capturing the following themes: homeowner requirements and expectations, satisfaction determinants and homeowners experiences with flooding. Although the findings are by no means conclusive and/or may not generalisable, they are still useful as a basis for exploring and understanding the experience of homeowners during the repair of their flood-damaged property. Some of the key issues uncovered during this stage formed the basis for further investigation in the second stage of the research (main questionnaire survey).

The issues that occurred more frequently than others are highlighted in the successive sections. Generally, the issues that are discussed in detail in the following sub-sections are only those issues that occurred in at least three out of ten of the interviews with either the homeowner and/or service providers sub-groups. The frequency of occurrence of issues among the various interviewees in either sub-group was seen as an indicator of the importance attached to issues under discussion.

5.5.1 Experiencing flooding events

Individual homeowners have their own unique and potentially complex experiences in flood events, which may be a function of a myriad of variables. However, the analysis of the interview data revealed several dimensions that appear to describe the experience of homeowners whose property have been flooded. The various issues raised by homeowners were summarised in five dimensions, which are outlined in Table 5.4. While these themes ran across the various interviews, the findings are not meant to be generalised for every flood victim but rather provide a good basis for further research in a bid to provide a more holistic understanding of homeowners' experiences of flood events and property reinstatement services.

5.5.1.1 Economic Aspects

Homeowners interviewed expressed concern regarding the potential reduction in property values due to flooding, loss of property in the case of under-insurance, and fears that insurers may not renew flood-cover for properties deemed to be at greater risk of flooding. The following quote illustrates these sentiments:

> *... if you claim, at the next renewal the premium goes up or they refuse to insure you. That's the other fear. That makes us loath to put a claim in the first place. ... A lot of insurers I believe would not consider a proposal from us if we were honest and say we've been flooded before. (male respondent, age 40-59, part-time lecturer, Stotteston).*

Table 5.4 Homeowners' experiences during flood damage to their properties

DIMENSIONS	DESCRIPTIVE STATEMENTS
Economic Aspects	Financial – expenses associated with living in temporary accommodation.
	Insurance Cover Fears – fear of potential premium rises and/or refusal by insurers to extend cover.
	Property Value – fear of potential reduction in property value and/or demand.
	Loss of Property – some of which may not be replaceable.
	Loss of Earnings – associated with staying off work to oversee repair work.
Emotional Issues	Fear of flooding – in the aftermath of a flood event.
	Leaving home – upheaval associated with leaving in alternative accommodation.
	Loss of Memorabilia – things which may be of sentimental value and irreplaceable.
	Fatigue – associated with cleaning up and repair work
	Reaction to flooding – included Disbelief, Shock, Surprise, Devastating, Stressful, Worried, 'Get on with Life'.
Service-Related	Service Experience – how their service providers dealt them with and how well their needs have been met.
	Communication – consistent, timely and information and/or advice.
	Loss of Control – while the repairs are being carried out
	Temporary Accommodation – proximity to home, comparability.
	Speed of Return to Property.
	Confidence in service providers – makes easy for homeowners' to get on with other aspects of life while repairs are ongoing.
	Fairness – how fair the homeowner perceives the settlement to have been
Social Aspects	Family support network – helps to cushion the impact of the catastrophe.
	Children – families with children experienced more difficulties in day to day running of household.
	Friends support network – another source of help for flood victims
	Community Spirit – may be fostered when a neighbourhood empathises
	Situational Issues – other personal circumstances such as family tragedies can compound the stress felt by flood victims.
	Homeowners' Characteristics - Individual characteristics may have a bearing on coping with the flood and its aftermath.
	Experience of Flooding –previously flooded homeowners find it easier to cope next time
	Personality – each homeowner is different and will cope differently in crisis
	Vulnerable Groups such as the Infirm, Elderly people – had unique requirements and some found it difficult to cope with the resulting upheaval.
Physical Aspects	Flood characteristics – e.g. floodwater depth, contamination, amount of floodwater, and duration of flooding, define the nature of the flood event.
	Extent of damage – extent of property damage and whether or not its insured.
	Flood warning – how much warning homeowners had before the flood.
	Flood Timing or Season – holiday time can be particularly distressing.

5.5.1.2 Physical Aspects

Homeowners raised a range of physical aspects that have a bearing on the experience of homeowners during a flood event. Floodwater depth, presence of contaminants in the flood-waters (e.g. sewage, fuel and chemicals.), the duration of the flood and the amount of floodwater, the speed at which the flood develops, whether or not homeowners received sufficient flood warning, the timing of the floods (for instance holiday seasons when households were looking forward to a peaceful holiday), all combine to influence the physical aspect of the householder's experience. The physical extent of damage to the property and contents, which is a function of some of the above factors, has a huge bearing on homeowners' experiences. However, some homeowners whose properties suffered significant flood damage seem to have coped well if they had a good service experience (service related aspects) with their service providers (insurers, loss adjusters, repairers).

5.5.1.3 Service-Related Issues

Homeowners' perception of the extent to which their needs were met and how their service providers treated them during the reinstatement process, were both raised as impacting on homeowners overall experience of the flood disaster. A feeling of loss of control once the homeowner handed the property keys to repairers was another highlighted element of their experience. However, the confidence an insured homeowner has in their service providers, particularly the contractor carrying out the repair works, was highlighted as moderating the homeowners' feelings of loss of control and their overall service-related experience. The quote below reflects these sentiments:

> *As soon as I knew "X" [company name withheld] was dealing with it [i.e. the repair works], I knew I could take a holiday - there was nothing for me to do. (male respondent, age 40-59, self-employed, Cornwall).*

5.5.1.4 Emotional Issues

One of the emotional aspects that came out strongly among the interviewees is the fear of flooding recurring, a concern that is referred to by Green et al. (1983) as flood "threat anxiety." The fear of repeat flooding when it rains, particularly for vulnerable people such as children and elderly people, has been identified in a number of studies (EA, 2001, Shackley *et al*., 2001). Below is a quote that illustrates the above concern:

> *Emotionally it really affected me…even now when it rains like its raining today I panic. Is it going to happen again? (female respondent, age 60+, retired, Blackburn).*

The loss of symbolic objects such as photographs, which may not be replaceable, proved to be a cause for distress. This has been previously reported in other research (Business & Marketing Research, 2001; Office of the Deputy Prime Minister, 2003). The following quotes illustrate these sentiments:

> *It [i.e. the flood] did affect us severely; we lost things that had been in the family over 100 years. You can't replace them. It is distressing and very sad. (female respondent, age 60+, retired, Glossop).*

People react differently when faced with a disaster. 'Disbelief', 'shock', 'surprise", 'devastating', 'stressful', 'worried' – are all words that typified the reaction of homeowners when they discovered their property was going to be flooded or had actually been flooded. The following quote illustrates homeowners' feelings when reacting to the threat or onset of flooding to their property:

> *We were not expecting it. We were watching the river rising and were concerned. We weren't familiar with the habits of flooding and when it came in from the back, as it's a lower level, we were surprised, as the river hadn't yet come from the front. We had in the end about an hour's warning from our neighbours who said we should move our furniture. We felt disbelief. (female respondent, age 60+, retired, Bewdley).*

However, some homeowners were simply determined to get on with their life, despite the upheaval, knowing that their home and/or contents were insured and would hence be replaced/repaired.

5.5.1.5 Social Aspects

Households with children had their own unique experiences particularly in the event that they moved into temporary accommodation outside their local area. Some experiences include: children missing their friends, children not being able to continue their normal club activities, for instance, as illustrated below:

> *… my children had to stop activities because we are actually living in another town now and I can't actually physically get them there and back. (female respondent, age 40-59, Teacher, Surrey).*

Service providers would do well to facilitate the acquisition of temporary accommodation to homeowners in close proximity to their home; however, this is not always possible especially in the event of very high demand as a result of many properties having been severely flooded in a local area.

Overall, there is limited research that evaluates the whole range of aspects of homeowners' experience in flooding events. As a result, an attempt was made to uncover dimensions of homeowners' experiences following flood damage to their property. The dimensions identified were classified as: economic aspects, emotional aspects, service-related aspects, social aspects and physical characteristics. Such a classification may be useful to service providers dealing with flood recovery by providing a more holistic understanding of their customers' experiences and requirements. This can facilitate the formulation of effective strategies to improve customer satisfaction.

5.5.2 The Needs of homeowners in flood damage claims

As discussed in Chapter 2, customers' needs are the requirements they have from their service providers. The analysis of the interview data revealed several factors that appear to be important requirements of homeowners in a claim for the repair of flood-damaged domestic property. Although, each homeowner had their own unique experience of the flood event and the process of repairing their property, it emerged that a number of factors played a significant role in homeowners' perceptions of the services they received during flood-damage claims. The views of homeowners regarding their requirements are summarised in Table 5.5, ranked according to the frequency at which the themes occurred. These findings were all from analysing the interview dataset obtained from interviewing the ten homeowners during the initial exploratory study.

Table 5.5 Homeowners' Needs

HOMEOWNERS' NEEDS	Homeowners Rank	Service Providers Rank
Easy access to Insurers	1	7
Communication - to be kept informed of the claim and repair process	1	1
Prompt response (initial response and processing claim)	2	4
Empathy & Reassurance in view of distress caused by flood event	2	2
Facilitate acquisition of alternative accomodation	3	4
Prompt reinstatement and settlement of claim	3	5
Understanding the roles and responsibilities of various parties	3	6
Having a single point of contact during the repair process	4	4
Consultation on all essential matters	4	5
Quality repairs (comparable to pre-existing standards)	5	3
Minimise flood impact by providing decent service	5	5
Reliability - service providers honour promises	5	6
Prompt Payment	5	6
Property to be clean, dry, odour free and sanitised	5	7
Assurance/Advice on Health and Safety aspects	6	1

More homeowners cited 'easy access to insurers' as an important requirement, while service providers hardly made reference to the matter. The following sentiments illustrate one homeowners experience as well as their perception of this requirement for easy access to their insurers:

> *[…] it was a nightmare. It happened on a Thursday and I rang them just before it happened to inform them. And then on a Friday we had actually moved out to my mum's. I presumed that we had 24hrs access and so I was gonna ring on the Saturday morning and actually get through. There was a loop on the emergency; I ring the emergency number, and there is a loop and it just told you the emergency number again; it didn't actually get through until Monday. And that was actually not good because then people had already started looking for rented accommodation; we were like the last on the list for that. (female respondent, age 40-59, Teacher, Surrey).*

Easy access to their insurers seemed to be important to homeowners in the aftermath of flood event as well as during the actual repair process. Below is an illustration of one homeowner's experience with accessibility to their insurer during the repair of the property:

> *[…] the insurers didn't want to speak to me; they always referred me to the loss adjusters and then the loss adjuster would say that he hadn't heard from the insurance company although he had reported. So you got this conflicting message which just leaves you feeling that nobody is doing anything about it really (male respondent, age 60+, retired, Bewdley).*

Some homeowners had a different experience with respect to accessibility to their insurers in the immediate aftermath of the flood event as well as during the repair process as illustrated below:

> *[…][Insurers] were very helpful. We told them we were going to flood and could we go into B & B and they said yes no problem just let us know where you are and how it's going. (female respondent, age 60+, retired, Bewdley).*

Another aspect that seemed to be more important to homeowners than to service providers, based on the frequency at which the theme occurred in the discourses, is that of 'quality of repairs (completed repairs to match pre-existing standards).' One homeowner remarked of a neighbour's experience of poor workmanship and bungled repair work:

> *We were about 4 months. We were lucky; my neighbour - she still isn't quite finished. Her painting was finished this morning but she still has her fireplace to be done. She has suffered a lot of mistakes. Her washing machine was plumbed in wrongly and a lot of other mistakes. (female respondent, age 60+, retired, Bewdley).*

Homeowners are becoming more and more conscious of the potential health risks associated with flooding to their properties, particularly arising from the contamination carried by floodwaters. However, it is still essential for the experts to provide advice to homeowners on any health and safety risks, which are often underestimated or ignored.

Service providers, inevitably, spoke more about the need to provide information and on health and safety issues than homeowners did. In particular, homeowners who wish to stay in their property during the repairs may require environmental health experts to advise them on the risks, if any, of doing so.

> *Some people take the view they want to stay in the house, in which case then they want an assurance that the contamination has been removed and sanitised, disinfected to make sure that the house is still habitable and often people in these circumstances will move upstairs and they then obviously require temporary facilities for cooking and so on and so forth. [Flood Restoration Contractor No. 2]*

Overall, individual homeowners will have unique requirements some of which will be specific to their own situation. For instance, the elderly and infirm spoke of the need for assistance to move contents such as furniture to the first floor to minimise damage. One homeowner remarked: "*Our neighbours helped us move the furniture and all was saved except the carpet." (female respondent, age 60+, retired, Bewdley).*

5.5.3 Expectations in the Flood Insurance Claim Chain

It has been highlighted in section 3.3.2 (Chapter 2) that expectations play a significant role in the way recipients of services evaluate an organisation's offerings. Table 5.6 presents a comparative analysis of the views of homeowners and service providers with respect to the expectations that homeowners have of the services they receive. The results are ranked according to the frequency at which the themes occurred in the interviews. As discussed earlier, only the themes which occurred most frequently are presented in Table 5.6. These findings were all from analysing the interview dataset obtained from interviewing the ten homeowners during the initial exploratory study.

It goes without saying that the ultimate expectation of a homeowner is that their insurer will at least cover the cost of putting them back to their pre-flood position. One homeowner encapsulated this expectation, saying:

I think the expectation is that someone else, your service provider will take care of the situation and put it right, to a large extent and when that doesn't happen, it's very disappointing and annoying. (male respondent, age 60+, retired, Bewdley).

Table 5.6 Homeowners' Expectations

EXPECTATIONS	Homeowners Rank	Service Providers Rank
To be prompt in initial response and carrying out the work	1	1
To be treated fairly in all negotiations and transactions	2	6
Complete the work to a good standard	3	2
Consult with homeowners all essential matters	3	6
Be flexible during the repair process	3	6
To receive a service of comparable standard	3	6
To be kept informed at all times	4	3
Trustworthy repair contractors	4	3
Reliable Contractors	4	5
To receive professional and expert advice	4	4
Minimum hassle during the process	4	6
Efficiency in repair process	4	6
Maintain sound relations with service providers	4	6
Familiarity with Contractor, where possible	4	None
Empathy & reassurance following the flood event	5	4
A named person dealing with the claim	5	6
Respect for homeowners' feelings	5	6
Alternative accommodation	5	4
Advice on options for flood resilient repairs	5	6

Homeowners have an expectation that their insurers will respond promptly once they register their claim and are seen to be doing something about the reinstatement. Promptness is also expected of service providers in discharging their functions throughout the insurance claim and repair of the property. This expectation ranked highly in terms of frequency of occurrence for both homeowners and service providers interviewed.

I expect them to be there and to see; they came too late; speed is important. All my other neighbours moved out immediately. They went to hotels after getting in touch with their insurers. They had vans there the following morning helping them move machines in to help the drying. I had nothing like that till the Monday. By

> *this time I'd got the sludge out myself (female respondent, age 60+, retired, Blackburn).*

It is important for homeowners' expectations to be managed and/or moderated by service providers discussing realistic timescales from the beginning of the claim. In particular, if homeowners are experiencing flooding to their property for the first time, there can be an unrealistic expectation that the repair to their property would be complete within a short space of time. However, this is usually not the case where an extensive flood is involved (refer to repairers' comments below).

> *I think the part we are involved in, most homeowners are really ignorant of the work we carry out and a lot of people just expect us to be able to take care of the water and so clean up and they can be back in a matter of days whereas if it's a been a major flood and the water has been standing, the water has completely soaked into the whole fabric of the building and therefore there is a lengthy drying out process required. [Repairer No. 5]*

Fairness in dealing with homeowners' claims, particularly when it comes to replacements of flood-damaged contents, fixtures and fittings is a crucial expectation, which service providers failed to appreciate. In particularly, loss adjusters are expected to be impartial in their damage assessment or recommendations of work to be carried out on the flood-damaged property. However, loss adjusters are often perceived to be working for the insurance company and hence unlikely to be completely impartial and/or fair to homeowners.

> *Our expectations are that we'll be treated fairly by loss adjusters and that they will be reasonable in entertaining the components of the claim (male respondent, age 40-59, part-time lecturer, Stotteston).*

Another expectation emphasised by homeowners more than service providers was that of consultation. Homeowners expect to be consulted on all essential issues pertaining to their property. It can be very frustrating for homeowners, to say the least, to find work has been or is being done to their property which they were not aware would be carried out. This expectation was illustrated by a homeowner as follows:

> *I think having things done in your home when you weren't aware that they were gonna be done or being able to make decisions when you weren't ready; it was very stressful. (female respondent, age 40-59, Teacher, Surrey).*

Homeowners expect service providers to be flexible during the claim and repair process, to allow for input from the homeowner, particularly on finishes, contents and potentially on flood resilience strategies of repair.

> *[…] I didn't want a wooden floor put down again for the flooding reason so we had a stone floor put down […] for which they paid for. I thought this was very good. The floor was replaced at my request (male respondent, age 60+, retired, Bewdley).*

> *We know a lot more now than we did 3 years ago and we would be able to deal with it much better ourselves so our expectations would be to insist on having our own builder and to expect that repairs would not be imposed upon us that we did not want, i.e. I heard of loss adjusters insisting that because an electrical point was on the skirting board before, it had to be on the skirting again, which makes no sense. It would be better put up higher. A Common sense approach is needed and I would insist on this (female respondent, age 60+, retired, Bewdley).*

The issue that often arises with regards to flexibility and resilient repairs has to do with the terms of the individual homeowner's insurance policy and who pays for any additional costs. In general, flood cover policies allow not like-for-like replacement or repairs rather than 'betterment' (at insurers' cost). Therefore, where the cost of any repairs proposed by the homeowner exceeds the cost of damage as covered in the policy, the additional cost would have to be borne by the insured homeowner.

The nature of flooding is such that often a number of properties within the same vicinity are flooded and these may be insured and subsequently repaired by different companies. It seems homeowners to expect to receive a service that is comparable with what their neighbours receive. They are likely to look at aspects such as the speed at which service providers respond, the nature of temporary accommodation arranged, the extent of work done to the property (e.g. what is being repaired versus replaced) and how long it takes to complete the repair work.

> ***All my other neighbours moved out immediately**. They went to hotels after getting in touch with their insurers. They had vans there the following morning helping them move machines in to help the drying. I had nothing like that till the Monday. By this time I'd got the sludge out myself (female respondent, age 60+, retired, Blackburn).*

This is why some have been calling for some sort of standardisation to the flood-damage repair process (Nicholas *et al.,* 2001). The second stage of data collection (questionnaire survey) investigated the extent to which homeowners engaged in service comparison and whether or not this had any statistically significant impact on their satisfaction.

The majority of expectations cited in Table 5.6 revolve around the themes of 'competence', 'relations' and 'communication' between service providers and homeowners.

5.5.4 Homeowner satisfaction with flood-damage repair claims

Based on the interview data, the most frequently cited causes of feelings of satisfaction among homeowners were as follows:

- Speed/promptness in response time and execution of the repair work,
- Quality of workmanship,
- Keeping homeowners informed at all times,
- Empathy and reassurance (understanding of the homeowner's situation),
- Involvement throughout the process (consultation),
- Delivering promises within reasonable timescales.

All the satisfaction determinants above have been discussed and were raised by homeowners as key requirements and/or expectations (refer to sections 5.5.2 and 5.5.3). It is therefore not surprising that homeowners should consider them as important factors in satisfaction. Below is how one homeowner encapsulated their perception of the service received from the contractor.

> *I think they have been very good. As I said the workmen have been very respectful; they've been sympathetic, they've been humorous [laughs] and they've understood our needs - sometimes just maybe to take a little bit more time out or whatever, and their workmanship has been brilliant, perfect (female respondent, age 40-59, Teacher, Surrey).*

Based on the interview data, the most frequently cited causes of feelings of dissatisfaction among homeowners were "Delays", "Poor quality repair works", "Inefficiency during the process", and "Little or no consultation on essential matters." It is not surprising that these are almost a mirror image of the satisfaction determinants cited above.

"Poor quality repair works" was cited as an essential requirement (Table 5.5) as well as a significant factor in homeowner dissatisfaction:

> *I think the other thing is when they came in to clean originally, it was nowhere near clean. I could have done a much better job, I felt and I had to go back several times in various parts of the house because it was not cleaned, it was just very casually done (male respondent, age 60+, retired, Bewdley).*

Asked what factors led to their dissatisfaction with the performance of their service providers, one homeowner cited "little or no consultation on essential matters" as follows:

> *It was just basically taken out of our hands. We weren't given any choices. We weren't told (female respondent, age 60+, retired, Blackburn).*

An element of feelings of loss of control can be seen in the above reference; this can only be exacerbated by lack of consultation and communication with the homeowner by the insurers and loss adjusters in particular.

5.6 SUMMARY

A thorough consideration of clients' needs is essential if businesses are to offer services that meet (or exceed) their clients' needs and expectations. While the literature significantly deals with the subject of the needs of commercial construction clients, there is limited research on homeowners' needs in the context of insurance claims for the repair of flood-damage property. As a result, an exploratory study involving in-depth semi-structured interviews was used to complement the findings of the literature review.

An attempt to appreciate the whole range of aspects of homeowners' experience in flooding events uncovered five dimensions of homeowners' experiences following flood damage to their property, namely: economic aspects, emotional aspects, service-related aspects, social aspects and physical characteristics.

Among other things, 'easy access to insurers' was one homeowner requirement that service providers did not seem to appreciate as much as homeowners did in the interviews. Promptness in response as well as carrying out the repair work on flood-damaged property was found to be a key expectation among homeowners, something which service providers seemed to appreciate.

The most frequently cited causes of feelings of satisfaction among homeowners revolved around the themes of promptness, communication, empathy and homeowner involvement in the process. The most frequently cited causes of feelings of dissatisfaction among homeowners were largely a reverse of the satisfaction determinants cited above.

Since the dimensions of homeowners experiences during the flood event were gleaned from an exploratory study involving ten homeowners and ten service providers, additional research to further test these dimensions would be necessary to advance current understanding of the human side of flood events. It is argued that a greater understanding of homeowners' experiences of flood events would be beneficial to all stakeholders involved in the damage management supply chain and should lead to improved services for insured flood victims thereby minimising the impact of flooding events on households.

Although the findings are by no means conclusive and/or generalisable, they are useful in providing a basis for further research into the experience of homeowners in flood-damage repair claims. The findings from this exploratory study were used to inform the development of the questionnaire used in the second stage of the data collection. Refer to Appendix I (from page 294) for a sample of the questionnaire or section 4.5.4 for discussion of the questionnaire and question design.

6.1 INTRODUCTION

This chapter presents the preliminary analysis and findings of the primary data collected through a questionnaire survey as described in the methodology chapter (refer to section 4.5). It focuses on the sampling issues, the questionnaire distribution and data collection. Preliminary analyses (i.e. initial screening and cleaning for quality of dataset, assessment of the validity of the scales used to determine whether they are actually measuring what they claim to be measuring, test for normality, checking for missing values and outliers) are then presented. The aim of this preliminary analysis is to provide detailed examination to the background information of the dataset and respondent characteristics, before presenting the further data analysis and hypothesis testing in Chapter 7.

6.2 DATA COLLECTION

The general research design has been presented in section 4.5 with an overview of aspects such as the philosophical issues, the chosen methods, the rationale for the choice, question design. This subsection expounds on the approaches used to sampling, identification of respondents, distribution of the questionnaire and the response rate obtained from the survey.

6.2.1 Distributing the Questionnaire

As previously discussed in Chapter 4 (refer to section 4.5.5), the questionnaire was subjected to the scrutiny of a robust team of 'experts' who had a valuable input in its development before it was piloted, all prior to the main survey. The choice of areas to be surveyed was important to the researcher due to its potential impact on the findings of the study. It was therefore important to ensure that the target areas were as 'representative' as possible while bearing in mind pragmatic considerations such as access issues. The areas affected by recent floods (2000-2004) were identified through Environment Agency reports, news reports (BBC News website – www.bbc.co.uk/news) and contacts with local flood action groups. Table 6.1 outlines the areas that were surveyed in the second phase of the research:

Table 6.1 Areas Surveyed

County	Areas	Questionnaires
Cambridgeshire	Ely	1
Cheshire	Runcorn	1
Blackburn	Rossendale	2
Cornwall	Redruth	4
Derbyshire	Penzance	2
Durham	Durham	1
East Sussex	Lewes	452
Essex	Saffron Walden, Braintree, Colchester	7
Greater London	Lambeth	3
Hampshire	Southsea	1
Kent	Peckham	350
Lancashire	Bolton, Barrow-in-furness	4
Lincolnshire	Scunthorpe	4
Monmouthshire	Monmouth	30
Nottinghamshire	Newark	7
Oxfordshire	Oxford	3
Pembrokeshire	Tenby	2
Shropshire	Shrewsbury	29
Somerset	Hillfarrance	10
Staffordshire	Rugeley	2
Suffolk	Lowestoft	2
Sussex	Haywards Heath	1
Surrey	Guildford, Woking	6
West Yorkshire	Bradford	180
Worcestershire	Worcester, Bewdley and Ironbridge	96
	Total	**1200**

Table 6.2 shows the several distribution methods employed for sending the questionnaires out, all with a view to maximise response rates. Based on anecdotal evidence, it was deduced from the pilot questionnaire of this study that respondents were more likely to complete the questionnaire if it was supported and/or distributed through the local flood action group.

Table 6.2 Questionnaire distribution channels

DISTRIBUTION METHOD		QUESTIONNAIRES SENT	
		No.	**Percentage of Total**
1.	Local flood action groups	504	42%
2.	Local Authority	630	52%
3.	Direct Mail Shot	66	6%
	TOTAL	**1200**	

Nearly half of the questionnaires (42%) were distributed through the local flood action groups. The groups were often contacted through links with the National Flood Forum, an organisation that has excellent relations with groups nationwide. Another 52% of the questionnaires were distributed through contacts with local authorities in Bradford and Lewes. The final channel of distribution was the direct mail shot. This target group was obtained through sending a flyer to customers of an insurance company that agreed to cooperate. Only those wishing to participate in the survey responded and provided their addresses to the researcher. Their addresses included: Essex, Durham, Blackburn, Cambridgeshire, Cornwall, Derbyshire, Cumbria, Oxfordshire, North Yorkshire, and Pembrokeshire.

6.2.2 Sampling issues

Sampling procedures are among the various avenues through which bias can be potentially introduced in research. The dependability of a survey is crucially affected by sampling or the system used to select respondents for the survey. Therefore sampling is an important element of research methodology as it influences or determines the extent to which the results of a study can/not be inferred to the entire population, i.e. it's closely linked to the concept of external validity or generalisability. A survey sample[1] of a population[2] is nearly always the focus of investigation in many studies as it is often impossible to study the entire population. Therefore, regardless of the research strategy

[1] A sample is a selection from the population (Robson, 2002).

[2] Population refers to all cases (Robson, 2002).

or investigatory techniques used, sampling considerations of some sort have to be made (Robson, 2002).

Probabilistic or representative sampling was not feasible in this study primarily because the population (i.e. all the people who meet the key criteria set out for the study (refer to page 135) is unknown[3]. To be truly random in determining the sample, it would be necessary to use a form of cluster sampling that involves identifying all the geographical areas or clusters[4] that have previously experienced flooding and then selecting sample clusters at random. This would then be followed by simple random sampling to determine the individual respondents. However, simple random sampling could not be used to determine the actual participants for survey due to lack of a full list of the sub-populations[5] within the clusters themselves.

Any value derived from such random sampling at the level of regions, counties, cities, towns or villages would have been negated by subsequent use of non-probabilistic sampling at the individual respondent level, due to lack of a full list of homeowners of interest in the identified areas, from which to draw a random sample. Non-probabilistic sampling was therefore the preferred option for sampling respondents within the sub-population or clusters once the clusters had been identified. A convenience sample was obtained within a purposefully constituted list of clusters of areas in England and Wales which had homeowners who filed flood damage repair claims with their domestic property insurer between the years 2000-2004. In order to enhance typicality of respondents surveyed, a deliberate attempt was made to ensure that the sample selection demonstrated some geographical dispersion, variety of flood events, varied extent of

[3] Both random and systematic sampling require a full list of the population. Other probabilistic sampling methods such as cluster sampling also require knowledge of all the clusters, which are then chosen at random.

[4] Used in this case to refer to previously flooded regions, counties, cities, towns or villages

[5] The sub-populations, in this case, consist of all the individual homeowners who experienced flooding between 2000 and 2004.

flooding in the area (both areas with few as well as those with large number of affected properties were included).

In addition, only those who had actually recently claimed on their flood insurance were surveyed in this study in order to capture their experience of the services they received. It may well be argued that a customer does not have enough information on a specific insurer's claim service until they have had an incident and subsequently claimed on their insurance (Schlesinger and Graf von der Schulenburg, 1993).

The survey was therefore targeted to claimants who met the following criteria:

- own a home that is insured against flooding; and
- have recently (2000-2004) experienced flood damage to their home; and
- subsequently claimed on their insurance policy following flood damage to their property; and
- the claim for the repair/restoration of the flood damaged property had been settled by the time of the survey.

The time restriction and emphasis on 'recent' customer experience of flood damage repair claims was to ensure that claimants' memory of the service received was deemed to be within a reasonable time. It is quite likely that the older the date of a transaction the less vivid will be the claimant's memory of details regarding their service experience. In addition, it was thought, that reported movements by homeowners after flood events may make it difficult to use events that affected homeowners as far back as 1998.

Generally, non-probabilistic sampling does not yield findings where statistical inferences can be made on the same grounds as in probabilistic sampling; however, it is still possible to say something sensible about the population (Robson, 2002), especially where deliberate efforts have been made to enhance typicality of respondents. However, it is generally admitted that the requirements of representative sampling are often difficult, if not impossible to fulfil in many studies (Robson, 2002), due to factors such as:

- Difficulty in establishing/obtaining sampling frames,
- Problems in getting information on the population due to the Data Protection Act,
- The problem of non-response and the need for pragmatic considerations.

Distributing some of the questionnaires through local flood action groups, arguably, introduces some bias in the research process in that those who respond are likely to be homeowners who perceive flooding to be a problem and/or had a bad service experience, and are possibly actively involved in a flood action group. However, the flood action groups that cooperated in this research provided assurances that they possessed databases with addresses of all the properties that were flooded in their locality. Due to Data Protection restrictions, they could not release such information to the researcher but agreed to mail the questionnaire to the entire population affected by flooding within the area of jurisdiction. In such cases, all homeowners of interest in the chosen areas were therefore surveyed, thereby mitigating or even eliminating any potential bias, at least at the point of selection of respondents and distribution of questionnaires.

Any of the challenges presented in this sub-section do not necessarily invalidate the study or render its findings somewhat inferior or deficient. Instead, the researcher's obligations in such instances are to demonstrate a level of honesty and transparency regarding the conduct of their research, the measures put in place to enhance credibility of the research as well as the potential limitations of the work/findings.

6.2.3 Questionnaire Response Rate

A minimum response of 200 useable questionnaires was aimed for as recommend by (Parasuraman, *et al.*, 1988) due to the incorporation of elements of SERVQUAL in the questionnaire. However, as shown in Table 6.3, 126 questionnaires in a useable form were returned, representing a response rate of 11%. When aggregated in this manner, the response rate may seem very low. Clearly, however, the direct mail shots distribution method yielded a higher response rate of 58%. A number of factors may have impacted the response rate of the other two distribution channels. Firstly, distribution of questionnaires close to the festival (Christmas) period did not help. In addition, it was also discovered that some questionnaires sent through local flood action groups reached homeowners after the stated deadline and hence they felt no need to complete them. Subsequent despatches of questionnaires did not have a fixed deadline but rather a stipulated duration of two weeks from receipt within which to complete and return them. A better response seemed to have been yielded as a result of this change of strategy.

Table 6.3 Response Rate

DISTRIBUTION METHOD		**QUESTIONNAIRES SENT**		**RESPONSES PER CATEGORY**	
		No.	**Percentage of Total**	**No. per category**	**Percentage per category**
1.	Local flood action groups	504	42%	56	11%
2.	Local Authority	630	52%	32	5%
3.	Direct Mail Shot	66	6%	38	58%
TOTAL		**1200**		**126***	**11%**
*Total usable questionnaires, excluding significantly incomplete ones.					

A number of strategies were adopted for the survey to increase the response rate, although they did not result in a significant response rate. Hill, *et al.* (2003) classify response-rate boosting strategies in four categories, namely essentials, advisables, marginals and avoidables. They propose four 'essential' ways of increasing response rate namely an accurate database, an easy and free response mechanism, follow-up strategy, and introducing the survey. Although these are presented in the context of customer satisfaction measurement for an organisation's customer base, they are worth considering.

An "accurate up-to-date database complete with contact names and correct job titles" as advocated by Hill, *et al.* (2003: 49) was not available to the researcher due to the nature of the population being surveyed. However, as previously discussed, local flood action groups who agreed to distribute the questionnaires confirmed they possessed a database of previously flooded homeowners and that the questionnaires would be sent, in some cases, to all the listed homeowners.

An easy and free response mechanism is seen as crucial to response rates for a postal survey. Hill, *et al.* (2003) argue that a significantly reduced response can be expected if such a provision is omitted. As a result, a postage-paid reply envelope, using a business reply service within the researcher's faculty, was sent with all the questionnaires.

A multiple follow-up strategy is also recommended for boosting response rates. This is a lot easier to implement when the researcher is in control of the channels of distribution of the survey instrument, which was not entirely the case in this study. However, it was still deemed essential to have some form of follow-up strategy. As discussed before, the researcher had full contacts details of the target sample in the "direct mail shot" questionnaire distribution category shown in Table 6.3. As a result, all non-respondents were sent a reminder 2 weeks after the first questionnaire was sent to them. After an additional 2 weeks, non-respondents were sent a final reminder with a copy of the questionnaire enclosed. This strategy may perhaps partly explain the relatively high response rate of 58%, especially that the cover letters were addressed to named individuals. Homeowners targeted through local flood action groups were not sent any further reminders due to the delivery arrangements of questionnaires to the sample audiences coinciding with the organisations' periodic correspondence from flood action groups to their members. On the other hand, the 'local authority' target group received a follow-up through a reminder cover letter and a copy of the questionnaire being sent to them after four weeks of the first questionnaire being sent to them. This does not seem to have made any significant impact on the total responses in this category.

Hill, *et al.* (2003) contend that a good introductory letter or email, showing the purpose of the survey, any potential benefits to the respondent has a significant positive impact on response rates and may boost them by up to 30 percent. As discussed in section 4.5.4 (from page 100) a good covering letter (attached in Appendix), with a professional look, was used to introduce the survey with the hope that it would enhance the response rate.

Socio-demographic assessments were carried out to ascertain the level of geographical representation offered by the respondents. This was intended to evaluate the potential incidence of significant bias within the responses. An overview of this assessment is presented herein (refer to section 6.2.4).

It is also worth noting that contrary to the expectation that homeowners would respond better to mail sent through their local flood action groups, as expressed earlier in this chapter, the best response rate came from the direct mail shot surveys. This may be explained by the fact that all the respondents targeted are those who had voluntarily responded to the researcher's mail shot through their insurance company, giving their undertaking to complete the questionnaire.

There were a number of non-useable questionnaires, which were either deemed too incomplete to be of any use or were completed by homeowners who did not meet the specified criteria (refer to section 6.2.2 in this chapter).

6.2.4 Socio-demographic assessment of respondents

Table 6.4 shows that the majority of the responses were based on flood events from the year 2000, which primarily refers to the summer 2000 floods that affected over 10,000 homes in England and Wales. The next highest number of respondents related to the 2002 flood events, followed by a few from 2001, 2003 and 2004. Although it may be argued that the October 2000 flood events were unique in terms of the scale of flooding and devastation and thereby the strain placed on the service providers, recent customer experiences from the Carlisle floods of 2005 (Hendy, 2006) indicate similar service problems faced by insured homeowners in previous flood events.

Table 6.4 Year of Flood Events

YEAR OF FLOOD EVENT	**QUESTIONNAIRE RESPONSE**	
	No.	**Percentage**
2000	80	63%
2001	6	5%
2002	29	23%
2003	6	5%
2004	5	4%
TOTAL	**126**	100%

The representation of respondents by age profile shows that nearly 50/50 split of those aged below 60years and those aged above 60 (refer to Table 6.5). This is consistent with the profile of respondents’ occupations in Table 6.6, which shows that 47.6% were retired while the rest were engaged in various other vocations.

Table 6.5 Age profile of respondents

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	2	1.6	1.6	1.6
	30-39	5	4.0	4.0	5.6
	40-59	55	43.7	43.7	49.2
	> 60	64	50.8	50.8	100.0
	Total	126	100.0	100.0	

Table 6.6 Occupations Profile of Respondents

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unskilled	1	.8	.8	.8
	Semi-skilled	2	1.6	1.6	2.4
	Skilled manual	7	5.6	5.6	7.9
	Professional	29	23.0	23.0	31.0
	Clerical	14	11.1	11.1	42.1
	Self-employed	8	6.3	6.3	48.4
	Retired	60	47.6	47.6	96.0
	Housewife/husband	5	4.0	4.0	100.0
	Total	126	100.0	100.0	

The satisfaction levels of respondents in the various questionnaire distribution categories (refer to Table 6.3) were investigated to see if there was any statistical difference in their mean scores.

Table 6.7 Satisfaction of Respondents by Questionnaire Distribution Method

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
OSat_Contractors	Flood Action Groups	52	4.0288	1.62822	.22579	3.5755	4.4821	.00	6.00
	Local Authority	32	3.9844	1.74358	.30822	3.3557	4.6130	.00	6.00
	Direct Mail Shot	36	4.2639	1.60128	.26688	3.7221	4.8057	1.00	6.00
	Total	120	4.0875	1.64197	.14989	3.7907	4.3843	.00	6.00
OSat_Claim Process & Settlement	Flood Action Groups	54	4.2037	1.41483	.19253	3.8175	4.5899	.75	6.00
	Local Authority	32	4.0964	1.52534	.26964	3.5464	4.6463	.00	6.00
	Direct Mail Shot	37	4.4707	1.54613	.25418	3.9552	4.9862	.00	6.00
	Total	123	4.2561	1.47922	.13338	3.9921	4.5201	.00	6.00
OVERALL Satisfaction_ALL	Flood Action Groups	54	4.0972	1.28787	.17526	3.7457	4.4487	.63	6.00
	Local Authority	32	4.0404	1.49227	.26380	3.5023	4.5784	.00	6.00
	Direct Mail Shot	37	4.3705	1.47339	.24222	3.8792	4.8617	.63	6.00
	Total	123	4.1646	1.39495	.12578	3.9156	4.4136	.00	6.00

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
OSat_Contractors	.011	2	117	.989
OSat_Claim Process & Settlement	.066	2	120	.936
OVERALL Satisfaction_ALL	.155	2	120	.856

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
OSat_Contractors	Between Groups	1.639	2	.820	.300	.741
	Within Groups	319.192	117	2.728		
	Total	320.831	119			
OSat_Claim Process & Settlement	Between Groups	2.669	2	1.335	.606	.547
	Within Groups	264.278	120	2.202		
	Total	266.947	122			
OVERALL Satisfaction_ ALL	Between Groups	2.308	2	1.154	.589	.557
	Within Groups	235.091	120	1.959		
	Total	237.399	122			

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
OSat_Contractors	Welch	.305	2	70.032	.738
	Brown-Forsythe	.297	2	102.968	.744
OSat_Claim Process & Settlement	Welch	.563	2	70.006	.572
	Brown-Forsythe	.591	2	103.523	.556
OVERALL Satisfaction_ALL	Welch	.539	2	68.567	.586
	Brown-Forsythe	.563	2	99.921	.571

a. Asymptotically F distributed.

A one-way between groups analysis of variance (ANOVA) was conducted to determine whether or not there was a statistical difference in the satisfaction scores among respondents who received their questionnaires through Local flood action groups, Local Authority and Direct Mail Shot.

The results (refer to Table 6.7) show **no significant difference** in the satisfaction mean scores at $p<.05$, for all homeowners in the three categories of questionnaire distribution methods (Group 1: Local flood action groups, and, Group 2: Local Authority, and Group 3: Direct Mail Shot) across all the three satisfaction dependent variables:

- Homeowners' satisfaction with the repair works and services of contractors (Overall Sat_Contractors) [$F(2,117)=.300$, $p=.741$].
- Homeowners' satisfaction with the repair works and services of contractors (Overall Sat_Claim Process & Settlement) [$F(2,120)=.606$, $p=.547$.
- Homeowners' satisfaction with the entire reinstatement process (Overall Satisfaction) [$F(2,120)=.589$, $p=.557$.

The mean scores have not been reported above due to the non-significant results; neither have the effect size been calculated. Further details of the analysis output can be found in Table 6.7.

Despite the relatively low response rate, which is not unusual with surveys, the author was satisfied that the likelihood of significant bias within the responses was minimal.

6.3 PREPARING THE DATA FOR ANALYSIS

A range of descriptive and inferential statistical analyses were conducted using SPSS (originally, *Statistical Package for the Social Sciences*) and are reported in this chapter. These analyses were applied to data collected in 126 responses obtained from the various distribution methods of the survey as discussed in section 6.2.3 of this chapter (refer to page 136).

6.3.1 Preparing the Data for Analysis

Prior to subjecting any data to statistical analysis, it is essential to screen the data to eliminate errors and to prepare it to facilitate the choice of suitable statistical techniques. Following the screening process, further steps were taken to prepare the data for analysis, namely:

- Transformation of some variables,
- Reliability testing,
- Missing value analysis,
- Checking for outliers, and
- Normality testing.

These processes and steps undertaken prior to the detailed data analysis are discussed below.

6.3.2 Screening and Cleaning the Data

Before starting any analysis, it is essential to check the data set for errors resulting from mistakes during data entry. Pallant (2005) points out that the process of screening data for statistical analysis involves three primary steps, namely: checking for errors, finding the error, and correcting the error in the data file.

The first step essentially involved looking for values that are not within the range of possible scores for each variable, which would have been entered by error. For categorical variables, this was done by obtaining frequencies together with minimum and maximum values using SPSS. Continuous variables were checked for errors by obtaining descriptive statistics including means scores, minimum and maximum scores, which can quite easily highlight any unusual means. Once an error was suspected, the second step involved locating the error within the data set using the “find” function within the data editor in SPSS. The third step involved correcting the identified error by going back to the questionnaires, finding the questionnaire with the relevant ID to obtain the correct data.

6.3.3 Outliers

In data analysis, "outliers" is a term used to refer to cases with values that lie well above or well below the majority of others cases. Outliers are an important consideration to make in data preparation as they could potentially distort statistics (Tabachnick and Fidell, 2001). Many statistical techniques commonly used in research are sensitive to outliers but the first step in dealing with outliers is to check that the value is not a genuine error from the data entry stage (Pallant, 2005).

As in the case of missing values, which are more difficult to deal with, researchers have to make decisions on how to treat outliers. Various solutions are suggested such as completely deleting the case or variable, adjusting values to reduce the influence of outliers, or retention of outliers. Based on suggestions by Pallant (2005), the potential effect of any outliers in the data set was investigated so as to see whether deletion or adjustment of values was necessary at all. To do so, the means and 5% trimmed means of each variable were inspected. Trimmed means refer to the mean values of an adjusted distribution that is recalculated in SPSS by removing the top and bottom 5% of cases (Pallant, 2005). As a result, if the differences between the two means are minimal, the outliers could be retained. Using this approach, the differences in the means were not found to be significant (ranging between –0.11 and 0.04), which resulted in the decision to retain the outliers for further analysis.

6.3.4 Normality

The assessment of variables for normality is a prerequisite of many statistical analyses, particularly where the researcher aims to generalise findings to the population from which the sample was drawn (Tabachnick and Fidell, 2001). It is generally accepted that normality of variables tends to yield better solutions owing to the use of the more robust parametric data analyses (Farrell and Gale, 2003). Pallant (2005) and Tabachnick and Fidell (2001) propose the use of either statistical or graphical means to assess normality. The statistical measures include the computations of the Kolmogorov- Smirnov ρ, Kurtosis K and Skewness S values. Ideally, the ρ-value should be more than 0.05 representing a non-significant result, whilst the K and S values should be zero.

Graphical measures involve the visual inspection of the histogram, normal Q-Q and detrended Q-Q plots. Accordingly, the histogram should appear reasonably normal (i.e. a peak near the middle of the distribution), the normal Q-Q plot should appear as a reasonably straight line, and the detrended Q-Q plot should not contain any real clustering of points, with most collecting around the zero line (refer to Pallant, 2005: 53 – 58; Tabachnick and Fidell, 2001: 73 – 77).

Assumptions of each statistical technique employed in testing hypotheses were checked for compliance in the relevant sections in this chapter. Where any assumptions were violated, solutions were sought that would minimise any bias such as the use of alternative non-parametric tests.

6.4 FROM QUESTIONNAIRE RESPONSES TO VARIABLES

The majority of the questions in the questionnaire were analysed as they are without any transformation and/or renaming. However, it is sometimes necessary to transform questions from a questionnaire into completely new variables for various reasons. For instance, combining two variables into one or collapsing values on a scale of 0-6 into a new scale with three new values, say -1 (previously 0-2), 0 (previously 3), 1 (previously 4-6). The transformation of questions from the questionnaire into research variables is explained in this section.

6.4.1 Satisfaction measures

Several satisfaction variables were adopted in order to try and capture data on a number of dimensions. This is due to the nature of the services received by homeowners during the repair of their flood damaged domestic property. As discussed previously (refer to section 2.7.2 from page 43), there are several different combinations of service providers involved in the claim chain. However, the primary service providers in the reinstatement work usually include the insurance company, loss adjusting firm, cleaning/drying firm, and/or repair contractor. It was therefore deemed necessary to evolve a number of measures for satisfaction which would aid in cross-checking the responses and also examining the relative importance of each service provision in the overall scheme of things.

As shown in Table 6.8, variables 19-21 are measures of homeowner satisfaction with the services of the three individual service providers', while variable 4-6 was an attempt to provide an overall measure of satisfaction with the entire "process", the "financial aspects of the claim" and the "completed repair works." These three measures were seen as capturing different aspects of the satisfaction during the claim, with a view to further investigate their uniqueness subsequent to the data collection.

Table 6.8 Satisfaction Measures

	VARIABLE ABBREVIATION AND DESCRIPTION	Questionnaire Reference
	SATISFACTION WITH INDIVIDUAL SERVICE PROVIDERS	
1.	INSURER_sAT-tangibles: Satisfaction with tangible service aspects	2.26
2.	INSURER_sAT-reliability: Satisfaction with reliability service aspects	2.27
3.	INSURER_sAT-responsiveness: Satisfaction with responsiveness service aspects	2.28
4.	INSURER_sAT-assurance: Satisfaction with assurance service aspects	2.29
5.	INSURER_sAT-empathy: Satisfaction with empathy service aspects	2.30
6.	LAdj_sAT-tangibles: Satisfaction with tangible service aspects	3.28
7.	LAdj_sAT-reliability: Satisfaction with reliability service aspects	3.29
8.	LAdj_sAT-responsiveness: Satisfaction with responsiveness service aspects	3.30
9.	LAdj_sAT-assurance: Satisfaction with assurance service aspects	3.31
10.	LAdj_sAT-empathy: Satisfaction with empathy service aspects	3.32
11.	KTOR_sAT-tangibles: Satisfaction with tangible service aspects	4.34
12.	KTOR_sAT-reliability: Satisfaction with reliability service aspects	4.35
13.	KTOR_sAT-responsiveness: Satisfaction with responsiveness service aspects	4.36
14.	KTOR_sAT-assurance: Satisfaction with assurance service aspects	4.37
15.	KTOR_sAT-empathy: Satisfaction with empathy service aspects	4.38
	SATISFACTION WITH INDIVIDUAL SERVICE PROVIDERS	
16.	oSAT_INSURER: Homeowner Satisfaction with Insurers Service	2.31
17.	oSAT_LOSS ADJUSTER: Homeowner Satisfaction with Loss Adjuster's Service	3.33
18.	oSAT_CONTRACTOR: Homeowner Satisfaction with Contractor's Service	4.39
	OVERALL SATISFACTION MEASURES	
19.	OSAT_PROCESS: Overall Homeowner Satisfaction with the process of handling their claim	5.4
20.	OSAT_FINANCIAL: Overall Homeowner Satisfaction with the financial settlement of the claim	5.5
21.	OSAT_REPAIRS: Overall Homeowner Satisfaction with finished repair/restoration work	5.6
22.	**OSAT_ALL:** Overall Homeowner Satisfaction with the entire service received	*

** this variable is a composite variable created from aggregating overall satisfaction measures (refer to section 7.6.3 on page 207).*

6.4.2 Collapsing variables for analysis

Collapsing variables refers to the process of combining values on a variable, which may be combined with the view to minimise the number of cells with expected values of 5 or less. This is often applied to variables being used on tables larger than 2 by 2.

Although the seven-point scale in the above example was used in the data collection instrument on the basis of sound theoretical premises, such as to allow measurement on a finely tuned interval scale, it was necessary to collapse the scale into three categories to allow for a more robust but consistent analysis. Since the original scale was labelled at both ends (with 0=dissatisfied and 6=very satisfied), collapsing the scale into three categories as shown in Table 6.9 (alternative B) is consistent and does not have adverse effects on the overall results or interpretation. To the contrary, it transforms the data into a format that enables further or alternative analysis which would otherwise not have been possible or fruitful.

Table 6.9 Collapsing Values on Satisfaction Variables

Original Scale on Questionnaire		**Alternative A Computed Numerical Scale**			**Alternative B Collapsed Values for Chi-square tests**	
Numerical Scale 1	**Description**	**Numerical Scale 2**	**Satisfaction %**	**Description**	**Numerical Scale 3**	**Description**
0	Very Dissatisfied	-3	-100%	Very Dissatisfied	-1	Dissatisfied
1		-2	-66.67%	Dissatisfied		
2		-1	-33.33%	Quite Dissatisfied		
3	**Neither/Nor**	**0**	**0%**	**Neither/Nor**	**0**	**Neither/Nor**
4		1	33.33%	Quite Satisfied	1	Satisfied
5		2	66.67%	Satisfied		
6	Very Satisfied	3	100%	Very Satisfied		

6.5 PRELIMINARY DESCRIPTIVE TESTS

Several descriptive statistics are presented as an aid to gaining an overall understanding of the individuals composing the data set used for the subsequent analyses. In SPSS, preliminary analyses employ various techniques depending on whether the data are categorical or interval / scale data. Categorical data can be analysed using “frequencies” while interval or scale data are presented using “descriptives.”

6.5.1 Personal Profiles Data

Table 6.10 outlines the basic data on the respondents’ personal profiles, which is useful in understanding the attributes of the individuals constituting the data set.

Table 6.10 Frequencies for Personal Profile data

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	60	47.6	47.6	47.6
	Male	66	52.4	52.4	100.0
	Total	126	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-29	2	1.6	1.6	1.6
	30-39	5	4.0	4.0	5.6
	40-59	55	43.7	43.7	49.2
	> 60	64	50.8	50.8	100.0
	Total	126	100.0	100.0	

Household Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 30000	77	61.1	64.2	64.2
	30001-50000	23	18.3	19.2	83.3
	50001-100000	16	12.7	13.3	96.7
	100001-200000	2	1.6	1.7	98.3
	> 200000	2	1.6	1.7	100.0
	Total	120	95.2	100.0	
Missing	System	6	4.8		
Total		126	100.0		

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Unskilled	1	.8	.8	.8
	Semi-skilled	2	1.6	1.6	2.4
	Skilled manual	7	5.6	5.6	7.9
	Professional	29	23.0	23.0	31.0
	Clerical	14	11.1	11.1	42.1
	Self-employed	8	6.3	6.3	48.4
	Retired	60	47.6	47.6	96.0
	Housewife/huband	5	4.0	4.0	100.0
	Total	126	100.0	100.0	

Ethnic background

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White (UK/other)	124	98.4	98.4	98.4
	Asian	1	.8	.8	99.2
	Other	1	.8	.8	100.0
	Total	126	100.0	100.0	

Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	11	8.7	8.9	8.9
	Married	79	62.7	63.7	72.6
	Widowed	16	12.7	12.9	85.5
	Divorced	17	13.5	13.7	99.2
	Separated	1	.8	.8	100.0
	Total	124	98.4	100.0	
Missing	System	2	1.6		
Total		126	100.0		

The gender division between males and females was nearly equal, with male respondents being slightly (52%) more than females. This was not deliberate in the sampling strategy but more a chance occurrence. More than half of the respondents in the data set (51%) were over 60 years of age, with the second largest category being those aged 40-59 years at 44%. This means nearly all respondents (94%) were aged over 40years of age, a statistic that is not surprising for people possessing their own home. Household income can be a sensitive question for respondents to answer; nearly 5% did not answer the question for one reason or the other. Of those who provided household income data, the majority (64%) earned less than £30,000, while the rest earned over £50,000 but under £100,000, while only 3% earned over £100,000.

Of all the respondents, 23% were holding professional jobs while a significant 47% were retired, a figure which is consistent with the fact that over half of the respondents were aged 60 years and above. Nearly all respondents were from a white ethnic background ("UK white" or other), with only two respondents being Asian or otherwise. The majority of respondents who provided data on the status were married (64%) while the rest were single, widowed, divorced or separated.

6.5.2 Background information on the flood event and property

The mean number of occupants in the properties in the data set was as follows: M=2.31, SD=1.293, with a range of 0-7 occupants, with the majority (67%) of the properties being occupied by one or two people. Table 6.11 shows that at least 21% had a family member with either a disability or a long-term illness at the time of the flood event. This may have implications, for instance, such as homeowners (in)ability to move contents to upper floors granted a reasonable advance warning. All homeowners included in the data set had experienced flood-damage to their property, the majority (66%) only once and a third of the respondents, twice or more. One might expect the expectations of homeowners in the two categories to differ due to previous experience. However, there is no statistically significant difference in mean satisfaction levels between homeowners who have experienced flooding to their properties once (M=4.14, SD=1.42) and those who have experienced repeat flooding (M=4.26, SD=1.36), $t(119)=-0.460$, $p=.646$).

Table 6.11 Occupants of flood-damaged property

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Household occupants during flood	122	0	7	2.31	1.293
Valid N (listwise)	122				

People in household during flood

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	1.6	1.6	1.6
	1	31	24.6	25.4	27.0
	2	49	38.9	40.2	67.2
	3	18	14.3	14.8	82.0
	4	17	13.5	13.9	95.9
	6	4	3.2	3.3	99.2
	7	1	.8	.8	100.0
	Total	122	96.8	100.0	
Missing	System	4	3.2		
Total		126	100.0		

Disability in household

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	24	19.0	20.5	20.5
	No	93	73.8	79.5	100.0
	Total	117	92.9	100.0	
Missing	System	9	7.1		
Total		126	100.0		

No. of previous flooding experiences

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Once	82	65.1	66.1	66.1
	Twice	19	15.1	15.3	81.5
	More than twice	23	18.3	18.5	100.0
	Total	124	98.4	100.0	
Missing	System	2	1.6		
Total		126	100.0		

6.5.3 Background information on the flood characteristics

A number of aspects of the flood events experienced by the homeowners surveyed were investigated including their perceived cause of the flood, whether or not they received any flood warning, the depth of the flood water in their property, how long the water was in their property, and whether or not there were any noticeable contaminants such as sewage and oil.

Table 6.12 shows that the vast majority (66%) of respondents attributed their inundation to a river or stream bursting its banks or overflowing, while 13% and 18% attributed their flood-damage to run-off due to rain and blocked drains, respectively. Asked how much time of advance warning respondents had regarding the risk of flooding, 39% had none at all, while the rest had some level of advance warning. This is an essential aspect in mitigating the extent of flood-damage, particularly to contents in domestic properties.

The depth of the floodwater that entered the property is a significant factor in predicting the extent of damage to property and contents. Table 6.12 shows that the majority (60%) of properties had up to half a metre of floodwater inside the property. In about half of the cases (54%) had the floodwater standing in the property for less than 24hrs while the other half of the properties were subjected to floodwater for over a day.

Over half of respondents reported the existence of noticeably contained contaminants in the floodwater that entered their home. Both noticeable such as sewage or oils and non-noticeable contaminants such as high salt content in the floodwater can render some contents such as food unusable and may also have detrimental effect on the fabric of the building. In addition, they pose health risks to homeowners and as such flood damaged properties often require specialist cleaning and sanitising.

Table 6.12 Background information on flooding characteristics

Cause of flooding

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sea	1	.8	.8	.8
	River/stream	83	65.9	66.4	67.2
	Burst mains w ater pipe	1	.8	.8	68.0
	Run-off due to rain	16	12.7	12.8	80.8
	Blocked drainage	23	18.3	18.4	99.2
	Other	1	.8	.8	100.0
	Total	125	99.2	100.0	
Missing	System	1	.8		
Total		126	100.0		

Flood warning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None at all	48	38.1	39.3	39.3
	less than 2hrs.	18	14.3	14.8	54.1
	2-4hrs.	17	13.5	13.9	68.0
	5-8hrs.	13	10.3	10.7	78.7
	9-12hrs.	6	4.8	4.9	83.6
	Over 12hrs.	20	15.9	16.4	100.0
	Total	122	96.8	100.0	
Missing	System	4	3.2		
Total		126	100.0		

Depth of flood water

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below ground level	12	9.5	9.8	9.8
	Up to half a metre above floor	74	58.7	60.2	69.9
	Over half a meter above floor	37	29.4	30.1	100.0
	Total	123	97.6	100.0	
Missing	System	3	2.4		
Total		126	100.0		

Duration of floodwater in property

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 2hrs.	5	4.0	4.1	4.1
	2-6hrs.	23	18.3	18.9	23.0
	7-12hrs.	14	11.1	11.5	34.4
	13-23hrs.	24	19.0	19.7	54.1
	1-3days	32	25.4	26.2	80.3
	> 3days	24	19.0	19.7	100.0
	Total	122	96.8	100.0	
Missing	System	4	3.2		
Total		126	100.0		

Noticeable contaminants

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	65	51.6	53.7	53.7
	No	56	44.4	46.3	100.0
	Total	121	96.0	100.0	
Missing	System	5	4.0		
Total		126	100.0		

6.5.4 Background information on the Insurance policy issues

Respondents were asked to provide background information relating to their insurance, including how long they spent in alternative accommodation, the type of policy from which they claimed, the value of the relevant claim, buildings and/or contents. The descriptive statistics are presented in Table 6.13 and discussed hereafter.

Due to the damage caused by flooding, homeowners often have to be re-housed in alternative accommodation while their property is being repaired. It is not uncommon for homeowners to elect to stay in their property (move to say, first floor) while repairs are being carried out for various reasons. This duration spent in alternative accommodation varies depending on the extent of the damage and the speed of reinstatement. Only 34% of those who answered the question did not spend any time in alternative accommodation, while the rest were out of their properties for anything from under three months to more than twelve months.

The vast majority (90%) of respondent homeowners claimed on both their contents and buildings insurance while only 10% claimed on only either buildings or contents. The value or size of the claims ranged from very small to large. Nearly 40% of the respondents' buildings' claims were worth less than £15,000, another 41% over £15,000, and the rest either 'didn't know' or did not answer the question. Contents' claims generally tend to be smaller compared to buildings claims for obvious reasons. Nearly 40% of the contents claims were over £5,000, a figure which corresponds with the buildings claims that were over £15,000.

Nearly half of all the claims were settled within the first six months of the flood event, while another 37% had their properties completed in 6-11 months. Only 13% of homeowners surveyed reported being out of their homes for over a year during the reinstatement process. The time taken to complete the repairs was deemed to be an important variable for use in comparing homeowners' satisfaction levels due to the upheaval and disruption to the normal course of life experienced by homeowners.

Table 6.13 Insurance cover aspects

Duration in temporary accommodation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 3months	18	14.3	16.7	16.7
	3-6months	24	19.0	22.2	38.9
	7-12months	26	20.6	24.1	63.0
	> 12months	3	2.4	2.8	65.7
	Not Applicable	37	29.4	34.3	100.0
	Total	108	85.7	100.0	
Missing	System	18	14.3		
Total		126	100.0		

Insurance policy claimed against

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Buildings	4	3.2	3.3	3.3
	Contents	8	6.3	6.6	9.9
	Buildings & contents	109	86.5	90.1	100.0
	Total	121	96.0	100.0	
Missing	System	5	4.0		
Total		126	100.0		

Amount of buildings claim

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< £2500	5	4.0	4.2	4.2
	£2500-£5000	19	15.1	16.1	20.3
	£5001-£15000	21	16.7	17.8	38.1
	> £15000	48	38.1	40.7	78.8
	Dont know	25	19.8	21.2	100.0
	Total	118	93.7	100.0	
Missing	System	8	6.3		
Total		126	100.0		

Amount of contents claim

		Frequency	Percent	Valid Percent	Cum
Valid	< £1000	11	8.7	9.2	9.2
	£1000-£2500	20	15.9	16.7	25.8
	£2501-£5000	24	19.0	20.0	45.8
	> £5000	46	36.5	38.3	84.2
	Dont know	19	15.1	15.8	100.0
	Total	120	95.2	100.0	
Missing	System	6	4.8		
Total		126	100.0		

Time taken to settle claim

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 6months	60	47.6	49.6	49.6
	6-11months	45	35.7	37.2	86.8
	12-18months	9	7.1	7.4	94.2
	18-24months	6	4.8	5.0	99.2
	> 24months	1	.8	.8	100.0
	Total	121	96.0	100.0	
Missing	System	5	4.0		
Total		126	100.0		

6.5.5 Background information on the property characteristics

Table 6.14 shows the property types, housing tenure and value of properties owned by the homeowners surveyed. These are important variables for this study as it is generally thought that they will either relate to the extent of damage (especially contents) and/or value of the claim. The properties owned by the respondents range from bungalows to cottages, the majority (89%) being detached, semi-detached or row/terrace houses. Over half of homeowners in the survey owned their properties outrightly whereas the rest were still mortgaged. The values of the flood damaged properties in the data set were from under £150,000 to over £500,000, with the properties £150,001-£300,000 the largest category.

Table 6.14 Characteristics of the flood-damaged property

Category of property type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bungalow	10	7.9	8.0	8.0
	Detached house	36	28.6	28.8	36.8
	Semi-detached house	32	25.4	25.6	62.4
	Row /terrace	43	34.1	34.4	96.8
	Flat/masionette	3	2.4	2.4	99.2
	Cottage	1	.8	.8	100.0
	Total	125	99.2	100.0	
Missing	System	1	.8		
Total		126	100.0		

HOUSING TENURE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Owned outright	66	52.4	55.0	55.0
	Mortgaged	54	42.9	45.0	100.0
	Total	120	95.2	100.0	
Missing	System	6	4.8		
Total		126	100.0		

Property value approximately

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< £150000	25	19.8	20.0	20.0
	£150001-£300000	71	56.3	56.8	76.8
	£300001-£500000	21	16.7	16.8	93.6
	> £500000	8	6.3	6.4	100.0
	Total	125	99.2	100.0	
Missing	System	1	.8		
Total		126	100.0		

6.5.6 Service quality and satisfaction: Insurance services

The 24 items of the questionnaire were used to evaluate the level of service quality of insurance services. As discussed in section 4.5.4, the homeowners were asked to evaluate their most recent claim experience and indicate their perceptions of the services received (in this case from insurers) compared to their expectations of what the service would be. Table 6.15 presents basic statistics of the range, mean and standard deviation for each variable in the scale. The mean scores on the seven point scale ranged from a low of 1.30 (SD=2.085) for "INSURER - staff appearance" to 4.41 (SD=1.48) for "Insurer - were polite."

Table 6.15 Service experience and perceptions - Insurers

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
INSURER - staff appearance	90	0	6	1.30	2.085
Insurer - vehicle appearance	67	1	6	4.04	1.224
Insurer - solutions were appropriate	106	0	6	3.91	1.727
Insurer - never too busy	108	0	6	3.87	1.681
Insurer - easy to contact insurer	112	0	6	3.75	1.722
Insurer - knowledge & competence	110	0	6	3.92	1.687
Insurer - understood my problems	112	0	6	3.95	1.729
Insurer - stayed involved	111	0	6	3.81	1.822
Insurer - relevant experience	109	0	6	3.93	1.654
INSURER - fulfilled promises timely	110	0	6	3.82	1.654
Insurer - sympathetic to problems	109	0	6	3.93	1.665
Insurer - dependable	108	0	6	3.95	1.643
Insurer - maintained records	108	0	6	3.94	1.659
Insurer - consistent point of contact	96	0	6	3.50	1.795
INSURER - told when to expect services	104	0	6	3.84	1.801
Insurer - returned calls promptly	111	0	6	3.80	1.773
Insurer - prompt services	112	0	6	3.98	1.771
Insurer - willing to help me	110	0	6	3.99	1.784
INSURER - trustworthy	111	0	6	4.32	1.579
Insurer - felt safe to deal with	111	0	6	4.25	1.581
Insurer - were polite	113	0	6	4.41	1.480
Insurer - support for employees	93	0	6	4.06	1.699
INSURER - personal attention	109	0	6	3.86	1.750
Insurer - understood my needs	109	0	6	3.92	1.651
Insurer - had my interests at heart	110	0	6	4.05	1.791
Valid N (listwise)	57				

Respondents were asked to rate their overall satisfaction or dissatisfaction, on a scale of 0-6, with the following five dimensions of the services they received during the repair of their property:

- The insurance company's service in terms of physical facilities, equipment, and appearance of personnel (INSURER_sAT-tangibles);
- The ability of the insurance company's employees to perform the promised service dependably and accurately (INSURER_sAT-reliability);
- The willingness of the insurance company employees to help you and to provide prompt services (INSURER_sAT-responsiveness);
- The knowledge, courtesy and ability of insurance company's employees to inspire trust and confidence (INSURER_sAT-assurance);
- The care and individualised attention provided by the insurance company's employees during the claim (INSURER_sAT-empathy).

Table 6.16 shows the various descriptive statistics, showing decent mean scores ranging from 4.05 (SD=1.718) for "INSURER_sAT-empathy" to 4.28 (SD=1.428) for "INSURER_sAT-tangibles." These overall scores on the five dimensions show that on average, homeowners were "quite satisfied" with the various service aspects of the insurer's service. This analysis was preliminary and preparatory, prior to the model development which focused on overall satisfaction measures. As a result no attempt was made here to determine how significant these differences in satisfaction levels were. It was not deemed necessary to test for any statistical significance in differences of mean scores of the various service aspects because these items were all part of a single service quality scale.

Table 6.16 Service Quality satisfaction – Insurers

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
INSURER_sAT - tangibles	99	0	6	4.28	1.422
Insurer_sAT - reliability	108	0	6	4.15	1.628
Insurer_sAT - responsiveness	108	0	6	4.18	1.651
Insurer_sAT - assurance	107	0	6	4.22	1.604
Insurer_sAT - empathy	107	0	6	4.05	1.718
oSAT_Insurer	**113**	**0**	**6**	**4.27**	**1.643**
Valid N (listwise)	97				

The homeowners' verdict of their overall satisfaction with the service provided by their insurance company (oSAT_Insurer) is also presented in Table 6.16 (M=4.27, SD=1.643), showing that overall, homeowners were quite satisfied with the services received.

6.5.7 Service quality and satisfaction: loss adjuster services

A scale consisting of 27 items of the questionnaire were used to evaluate the level of service quality of Loss Adjusters' services. As discussed in section 4.5.4, the homeowners' were asked to evaluate their most recent claim experience and indicate their perceptions of the services received from their loss adjusters during the claim compared to their expectations of what the service would be. Table 6.17 presents basic statistics of the range, mean and standard deviation for each variable in the scale. The mean scores on the seven point scale ranged from a low of 3.70 (SD=2.011) for "LAdj - consistent point of contact" to 4.42 (SD= 1.492) for the variable "LAdj - were polite."

Respondents were asked to rate their overall satisfaction or dissatisfaction, on a scale of 0-6, with the following five dimensions of the services they received during the repair of their property:

- The loss adjuster's service in terms of physical facilities, equipment, and appearance of personnel (LAdj_sAT-tangibles);

- The loss adjuster's ability to perform the promised service dependably and accurately (LAdj_sAT-reliability);

- The willingness of the loss adjuster to help you and to provide prompt services (LAdj_sAT-responsiveness);
- The knowledge, courtesy and ability of loss adjuster to inspire trust and confidence (LAdj_sAT-assurance);
- The care and individualised attention provided by the loss adjuster during the claim (LAdj_sAT-empathy).

Table 6.17 Service experience and perceptions – Loss Adjusters

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
LADJ - staff appearance	107	0	6	4.34	1.387	1.923
LAdj - vehicle appearance	85	0	6	4.12	1.375	1.891
LAdj - solutions were appropriate	109	0	6	4.06	1.789	3.201
LAdj - never too busy	109	0	6	3.82	1.822	3.318
LAdj - easy to contact insurer	110	0	6	3.74	1.933	3.737
LAdj - knowledge & competence	110	0	6	4.05	1.699	2.888
LAdj - understood my problems	110	0	6	4.02	1.837	3.376
LAdj - stayed involved	109	0	6	4.04	1.880	3.536
LAdj - relevant experience	107	0	6	4.15	1.692	2.864
LAdj - coordinated contractors & repairs	100	0	6	3.81	1.911	3.650
LAdj - we had similar views on important issues	104	0	6	3.99	1.948	3.796
LADJ - fulfilled promises timely	109	0	6	3.95	1.843	3.396
LAdj - sympathetic to problems	104	0	6	4.02	1.931	3.728
LAdj - dependable	106	0	6	4.04	1.734	3.008
LAdj - maintained records	100	0	6	3.99	1.931	3.727
LAdj - consistent point of contact	97	0	6	3.70	2.011	4.045
LADJ - told when to expect services	109	0	6	3.88	1.860	3.458
LAdj - returned calls promptly	108	0	6	3.85	1.889	3.567
LAdj - prompt services	107	0	6	3.96	1.873	3.508
LAdj - willing to help me	107	0	6	3.99	1.911	3.651
LADJ - trustworthy	110	0	6	4.14	1.748	3.055
LAdj - felt safe to deal with	106	0	6	4.08	1.826	3.336
LAdj - were polite	109	0	6	4.42	1.493	2.228
LAdj - support for employees	90	0	6	4.22	1.701	2.894
LADJ - personal attention	109	0	6	3.96	1.939	3.758
LAdj - understood my needs	109	0	6	4.06	1.870	3.497
LAdj - had my interests at heart	108	0	6	3.97	1.945	3.784
Valid N (listwise)	62					

Table 6.18 shows the various descriptive statistics, showing decent mean scores ranging from 4.06 (SD=1.809) for "LAdj_sAT- responsiveness" to 4.29 (SD=1.543) for "LAdj_sAT-tangibles." These overall scores on the five dimensions show that on average, homeowners were "quite satisfied" with the various service aspects. This analysis was preliminary and preparatory, prior to the model development which

focused on overall satisfaction measures. As a result no attempt was made here to determine how significant these differences in satisfaction levels were. It was not deemed necessary to test for any statistical significance in differences of mean scores of the various service aspects because these items were all part of a single service quality scale.

Table 6.18 Service Quality satisfaction – Loss Adjusters

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
LAdj_sAT - tangibles	106	0	6	4.29	1.543
LAdj_sAT - reliability	110	0	6	4.14	1.667
LAdj_sAT - responsiveness	110	0	6	4.06	1.809
LAdj_sAT - assurance	110	0	6	4.19	1.743
LAdj_sAT - empathy	109	0	6	4.11	1.812
oSAT_Loss Adjuster	**110**	**0**	**6**	**4.19**	**1.684**
Valid N (listwise)	102				

The homeowners' verdict of their overall satisfaction with the services provided by their loss adjusting firm (oSAT_Loss Adjuster) is also presented in Table 6.18 (M=4.19, SD=1.684), showing that overall, homeowners were quite satisfied with the services received.

6.5.8 Service quality and satisfaction: contractor services

A scale consisting of 33 items of the questionnaire were used to evaluate the level of service quality of contractors' services. As discussed in section 4.5.4, the homeowners' were asked to evaluate their most recent claim experience and indicate their perceptions of the services received from their contractors during the claim compared to their expectations of what the service would be. Table 6.19 presents basic statistics of the range, mean and standard deviation for each variable in the scale. The mean scores on the seven point scale ranged from a low of 3.44 (SD=1.872) for "Ktor - prompt services" to 4.18 (SD=1.553) for "Ktor - were polite."

Table 6.19 Service experience and perceptions - Contractors

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
KTOR - staff appearance	112	0	6	3.63	1.465	2.146
Ktor - vehicle appearance	109	0	6	3.69	1.399	1.957
Ktor - solutions were appropriate	113	0	6	3.67	1.693	2.865
Ktor - never too busy	112	0	6	3.52	1.765	3.117
Ktor - easy to contact contractor	111	0	6	3.59	1.786	3.190
Ktor - knowledge & competence	114	0	6	3.78	1.708	2.916
Ktor - understood my problems	114	0	6	3.80	1.756	3.083
Ktor - relevant experience	114	0	6	3.95	1.687	2.847
Ktor - good level of supervision	111	0	6	3.59	1.851	3.425
Ktor - we had similar views on important issues	111	0	6	3.65	1.862	3.466
Ktor - up-to-date equipment and tools	113	0	6	3.95	1.563	2.444
Ktor - good quality of repair works	113	0	6	3.81	1.830	3.349
Ktor - kept property tidy	110	0	6	3.62	1.807	3.266
Ktor - protection to existing structure and contents	110	0	6	3.65	1.790	3.203
Ktor - size of contractor's org.	110	0	6	3.79	1.767	3.121
KTOR - fulfilled promises timely	113	0	6	3.50	1.828	3.341
Ktor - sympathetic to problems	111	0	6	3.67	1.670	2.788
Ktor - dependable	113	0	6	3.57	1.797	3.230
Ktor - maintained records	105	0	6	3.62	1.773	3.142
Ktor - did work in timely manner	112	0	6	3.49	1.894	3.586
Ktor - consistent point of contact	101	0	6	3.76	1.784	3.183
KTOR - told when to expect services	113	0	6	3.68	1.764	3.112
Ktor - returned calls promptly	109	0	6	3.54	1.864	3.473
Ktor - prompt services	111	0	6	3.44	1.872	3.503
Ktor - willing to help me	112	0	6	3.71	1.737	3.017
KTOR - trustworthy	113	0	6	3.91	1.830	3.349
Ktor - felt safe to deal with	113	0	6	3.88	1.852	3.431
Ktor - were polite	114	0	6	4.18	1.553	2.411
Ktor - support for employees	103	0	6	3.71	1.882	3.542
KTOR - personal attention	112	0	6	3.82	1.741	3.031
Ktor - understood my needs	111	0	6	3.81	1.735	3.009
Ktor - came to work at convinient times	110	0	6	3.78	1.814	3.291
Ktor - had my interests at heart	111	0	6	3.53	2.049	4.197
Valid N (listwise)	75					

Respondents were asked to rate their overall satisfaction or dissatisfaction, on a scale of 0-6, with the following five dimensions of the services they received during the repair of their property:

- The contractor's service in terms of physical facilities, equipment and appearance of personnel (KTOR_sAT-tangibles);
- The contractor's ability to perform the promised service dependably and accurately (Ktor_sAT- reliability);

- The willingness of the contractor’s employees to help you and to provide prompt services (Ktor_sAT- responsiveness);

- The knowledge, courtesy and ability of contractor’s employees to inspire trust and confidence (Ktor_sAT- assurance);

The care and individualised attention provided by the contractor’s employees during the claim (Ktor_sAT- empathy).

Table 6.20 shows the various descriptive statistics, showing decent mean scores ranging from 3.79 (SD=1.809) for “Ktor_sAT- responsiveness” to 3.93 (SD=1.602) for “Ktor_sAT-tangibles.” These overall scores on the five dimensions show that on average, homeowners were “quite satisfied” with the various service aspects. This analysis was preliminary and preparatory, prior to the model development which focused on overall satisfaction measures. As a result no attempt was made here to determine how significant these differences in satisfaction levels were. It was not deemed necessary to test for any statistical significance in differences of mean scores of the various service aspects because these items were all part of a single service quality scale.

Table 6.20 Service Quality satisfaction - Contractors

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
KTOR_sAT - tangibles	113	0	6	3.93	1.602
Ktor_sAT - reliability	114	0	6	3.82	1.783
Ktor_sAT - responsiveness	114	0	6	3.79	1.797
Ktor_sAT - assurance	114	0	6	3.82	1.748
Ktor_sAT - empathy	114	0	6	3.80	1.776
oSAT_Contractor	**118**	**0**	**6**	**3.90**	**1.761**
Valid N (listwise)	111				

The homeowners’ verdict of their overall satisfaction with the services provided by their contractors (oSAT_Contractor) is also presented in Table 6.20 (M=3.90, SD=1.761), showing that overall, homeowners were quite satisfied with the services received. However, these scores are marginally lower than those for the insurance (M=4.27, SD=1.643) and loss adjuster services (M=4.19, SD=1.684).

6.6 PRELIMINARY INFERENTIAL TESTS

Further to the preliminary data analyses presented in section 6.5, this section presents some preliminary inferential data analysis, prior to conducting the hypothesis testing and modelling (refer to Chapter 7). The aim of such analysis was to identify some of the important variables in the data set which may later aid in explaining the results of the hypothesis testing as well as aid in forming a more complete picture of the findings of the research. The main statistical techniques employed in this section included the chi-square test of independence, independent samples t-test and one-way between groups Analysis of Variance (ANOVA).

6.6.1 Chi-Square Test for Independence

The chi-square test of independence is often thought of in two ways: as a test of association or as a test of differences between independent groups. It allows tests to be conducted to determine whether or not two categorical variables are associated with each other (Brace *et al*., 2003). Chi-square test is typically used to determine whether two categorical variables are related by comparing the frequency of cases found in the various categories of one variable across the different categories of another variable (Pallant, 2005). For instance, a researcher may be interested in finding out if the proportion of satisfied to dissatisfied homeowners in flood damage claims will be the same for males and females. In this case the two categorical variables will be SATISFACTION (which may have three categories, say 0=dissatisfied, 1=neither/nor, 2=satisfied) and SEX (which will normally have two categories, say 1=male, 2=female).

The chi-square test calculates the expected frequency in each cell and then compares the expected frequencies with the observed frequencies. If the observed frequencies and expected frequencies differ significantly, the distribution of observations across the cells is not random and hence it may be concluded that there is a significant association between the variables, i.e. the variables are not independent of each other for the sample in question (Brace *et al*., 2003). The test requires the following data type:

- Two categorical variables, with two or more categories/values in each, for instance gender (male/female) and satisfaction (dissatisfied/neither satisfied nor/satisfied);

- The lowest expected frequency in each cell of the crosstabulation of the variables should be 5 or more, although less stringent criteria may be accepted (i.e. at least 80 percent of cells to have expected frequencies of 5 or more). In addition, when the exact significance is employed rather than the Asymptotic significance, this requirement can be violated without compromising the test.

Depending on the sample and distribution of the data, it is often necessary to collapse some variables to minimise the number of cells with expected values of 5 or less, and thereby complying with the requirements of the chi-square test. The process of collapsing variables has been described earlier in section 6.4.1 (refer to page 145) of this chapter.

An exact test can then be obtained in SPSS which provides a better indication of the relationship between the variables than when using the asymptotic significance. SPSS Exact Tests allow for analysis of even a relatively small sample while still providing accurate results. Without SPSS Exact Tests, such analysis would not normally be favoured based on the now outdated assumption that the small number of cases was too few for credible analysis. In this study, the exact test was preferred unless it could not be computed due to memory on the computer versus the number of iterations required.

There is no agreement as to the value of using the Yates' Correction for Continuity when a 2x2 table is encountered in the Chi-square test output. Based on the advice by Field (2000), the use of the Yates' Correction for Continuity has been ignored in favour of the ordinary Pearson's Chi-square, primarily because the exact significance was used as opposed to asymptotic significance.

6.6.1.1 Interpreting Chi-Square Test Results

The main value of interest in the chi-square test is the Pearson's Chi-square Value with its associated significance level (exact sig.). If the significance level is greater than *.05*, then the result is not significant. It means that there is no significant difference in the proportions of cases found in the various categories of one variable across the different categories of the other variable.

6.6.2 Chi-Square Test – Flood depth and claim size

The relationship between the depth of floodwaters and the size of respondents' claims was investigated using the exact chi-square test of independence. Both the contents and buildings claim were of interest as it is hypothesised that the higher the extent of flood depth, the larger the claim will be.

Table 6.21 shows that there was a statistically significant relationship between the depth of floodwaters in the property and the size (value) of the contents claim, X^2 (4, n=118) = 13.381, p<.01. A higher depth in the floodwater that entered the flood-damaged property was associated with higher value in the contents claim.

Table 6.21 Flood depth -v- size of contents claim

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Depth of flood water * CLAIM SIZE_CONTENTS	118	93.7%	8	6.3%	126	100.0%

Depth of flood water * CLAIM SIZE_CONTENTS Crosstabulation

			CLAIM SIZE_CONTENTS			Total
			<£5000	>£5,000	Don't know	
Depth of flood water	Below ground level	Count	9	1	1	11
		Expected Count	5.0	4.2	1.8	11.0
		% within Depth of flood water	81.8%	9.1%	9.1%	100.0%
		% within CLAIM SIZE_ CONTENTS	16.7%	2.2%	5.3%	9.3%
		% of Total	7.6%	.8%	.8%	9.3%
	Up to half a metre above floor	Count	34	23	14	71
		Expected Count	32.5	27.1	11.4	71.0
		% within Depth of flood water	47.9%	32.4%	19.7%	100.0%
		% within CLAIM SIZE_ CONTENTS	63.0%	51.1%	73.7%	60.2%
		% of Total	28.8%	19.5%	11.9%	60.2%
	Over half a meter above floor	Count	11	21	4	36
		Expected Count	16.5	13.7	5.8	36.0
		% within Depth of flood water	30.6%	58.3%	11.1%	100.0%
		% within CLAIM SIZE_ CONTENTS	20.4%	46.7%	21.1%	30.5%
		% of Total	9.3%	17.8%	3.4%	30.5%
Total		Count	54	45	19	118
		Expected Count	54.0	45.0	19.0	118.0
		% within Depth of flood water	45.8%	38.1%	16.1%	100.0%
		% within CLAIM SIZE_ CONTENTS	100.0%	100.0%	100.0%	100.0%
		% of Total	45.8%	38.1%	16.1%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	13.381[a]	4	.010	.009		
Likelihood Ratio	13.698	4	.008	.011		
Fisher's Exact Test	12.404			.011		
Linear-by-Linear Association	3.173[b]	1	.075	.090	.047	.017
N of Valid Cases	118					

a. 2 cells (22.2%) have expected count less than 5. The minimum expected count is 1.77.

b. The standardized statistic is 1.781.

A chi-square test of independence was performed to examine the relationship between the depth of floodwaters in the property and the size (value) of the buildings claim. Table 6.22 shows that there was a statistically significant relationship between the depth of floodwaters in the property and the size (value) of the buildings claim, X^2 (6, n=116) = 15.096, p<.05. A higher depth in the floodwaters that entered a property is more likely to result in a bigger buildings claim in value.

Table 6.22 Flood depth -v- size of buildings claim

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Depth of flood water * CLAIM SIZE_BLDGS.	116	92.1%	10	7.9%	126	100.0%

Depth of flood water * CLAIM SIZE_BLDGS. Crosstabulation

			CLAIM SIZE_BLDGS.				
			<£5000	£5000-15,000	>£15,000	Don't know	Total
Depth of flood water	Below ground level	Count	5	2	2	3	12
		Expected Count	2.4	2.2	4.9	2.6	12.0
		% within Depth of flood water	41.7%	16.7%	16.7%	25.0%	100.0%
		% within CLAIM SIZE_BLDGS.	21.7%	9.5%	4.3%	12.0%	10.3%
		% of Total	4.3%	1.7%	1.7%	2.6%	10.3%
	Up to half a metre above floor	Count	17	14	24	13	68
		Expected Count	13.5	12.3	27.6	14.7	68.0
		% within Depth of flood water	25.0%	20.6%	35.3%	19.1%	100.0%
		% within CLAIM SIZE_BLDGS.	73.9%	66.7%	51.1%	52.0%	58.6%
		% of Total	14.7%	12.1%	20.7%	11.2%	58.6%
	Over half a meter above floor	Count	1	5	21	9	36
		Expected Count	7.1	6.5	14.6	7.8	36.0
		% within Depth of flood water	2.8%	13.9%	58.3%	25.0%	100.0%
		% within CLAIM SIZE_BLDGS.	4.3%	23.8%	44.7%	36.0%	31.0%
		% of Total	.9%	4.3%	18.1%	7.8%	31.0%
Total		Count	23	21	47	25	116
		Expected Count	23.0	21.0	47.0	25.0	116.0
		% within Depth of flood water	19.8%	18.1%	40.5%	21.6%	100.0%
		% within CLAIM SIZE_BLDGS.	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	19.8%	18.1%	40.5%	21.6%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	15.096[a]	6	.020	.018		
Likelihood Ratio	17.572	6	.007	.011		
Fisher's Exact Test	16.350			.008		
Linear-by-Linear Association	8.437[b]	1	.004	.004	.002	.001
N of Valid Cases	116					

a. 4 cells (33.3%) have expected count less than 5. The minimum expected count is 2.17.

b. The standardized statistic is 2.905.

6.6.3 Service Comparison –v- Homeowner Satisfaction

A preliminary analysis was conducted to determine if a relationship exists between homeowner satisfaction and whether or not a homeowner compares the services they receive with what other homeowners receive. The aim was to compare homeowner "satisfaction" (with each service provider) for two groups of homeowners, i.e. those who had compared the service level received with what other homeowners received and those who did not compare their service with others. "Service Comparison" was the Independent Variable used to categorise homeowners in the two groups.

Table 6.23 Summary of requirements for Independent samples t-test

Independent Samples t-test	
Two Variables required	
DV	One continuous dependent variable (Satisfaction) • oSAT_Claim process • oSAT_Financial aspects • oSAT_Repair works
IV	One categorical independent variable • Service Comparison
Nature of statistic	A Parametric test.

6.6.3.1 Independent samples t-test

The independent samples t-test is normally employed when comparing the mean scores, on a continuous dependent variable, of two different groups of people or conditions (Pallant, 2005). In this case: homeowners who actively compared the service they received in the aftermath of the flood event and those who did not.

It is essential when using the t-test to check whether or not the variation of scores is the same for the two groups as this determines which t-value should be used to interpret the findings in the SPSS output. If the sig. value from the Levene's test for equality of variances is larger than .05, then there is equal variation in the scores and **equal Variance is assumed.** However, if the sig. value in the Levene's test for equality of variances is equal to or less than .05, then there is unequal variation in the scores and **equal Variance is not assumed.**

To determine whether or not there is a statistically significant difference in the two groups being examined, the sig. value in the independent samples test must be significant at the chosen cut-off of .05.

When a statistically significant difference in the two groups being examined is detected, it is useful to calculate the effect size, which is a measure of the strength of association. Effect size was calculated using eta squared (*refer to formula below*), with .01, .06, and .14 being deemed to be small, moderate and large effects respectively.

$$Eta\ Squared = \frac{t^2}{t^2 + (N1 + N2 - 2)}$$

6.6.3.2 <u>Does Service Comparison influence homeowner Satisfaction?</u>

The results (refer to Table 6.24) show **no significant difference** in the satisfaction mean scores of homeowners who self-reported to have <u>compared</u> the services they received and those who did not compare for the following dependent variable:

- the scores of homeowners' overall satisfaction with the financial settlement (OSAT_Financial) for homeowners who self-reported to have <u>compared</u> the services they received (<u>M</u>=4.36, <u>SD</u>=1.60), and those who <u>did not compare</u> their service with other homeowners (<u>M</u>=4.81, <u>SD</u>=1.03), <u>t</u>(86.97=-1.804, <u>p</u>=.075.

This is not a very surprising result considering that homeowners are often unaware of the extent of the financial settlement on flood damage insurance claims. In addition, any such comparison on the financial settlement variable would have to involve discussion financial settlements with other homeowners, which is uncommon.

However, there were **statistically significant differences** in two dependant variables (refer to Table 6.24) as outlined below.

- the scores of homeowners' overall satisfaction with the process (OSAT_Process) for homeowners who self-reported to have <u>compared</u> the services they received

(M=4.08, SD=1.77), and those who did not compare their service with other homeowners (M=4.78, SD=1.039), t(94.42)=-2.63, p=.01. The magnitude of the differences in the means was moderate (eta squared=.06).

- the scores of homeowners' overall satisfaction with the repair works (OSAT_Repairs) for homeowners who self-reported to have compared the services they received (M=4.12, SD=1.88), and those who did not compare their service with other homeowners (M=4.80, SD=1.19), t(80.89)=-2.298, p=.02. The magnitude of the differences in the means was small (eta squared=.04).

Table 6.24 T-test comparing Service Satisfaction -v- Service Comparison

Group Statistics

	SERVICE COMPARISON	N	Mean	Std. Deviation	Std. Error Mean
OSAT_Claim Process	No	32	4.7813	1.03906	.18368
	Yes	85	4.0824	1.77423	.19244
OSAT_Financial	No	32	4.8125	1.02980	.18204
	Yes	84	4.3571	1.60303	.17490
OSAT_Repairs	No	30	4.8000	1.18613	.21656
	Yes	85	4.1176	1.87345	.20320

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
OSAT_Claim Process	Equal variances assumed	11.809	.001	2.094	115	.038	.69890	.33380	.03770	1.36009
	Equal variances not assumed			2.627	94.422	**.010**	.69890	.26603	.17072	1.22708
OSAT_Financial	Equal variances assumed	6.334	.013	1.492	114	.139	.45536	.30526	-.14936	1.06008
	Equal variances not assumed			1.804	86.969	**.075**	.45536	.25245	-.04642	.95713
OSAT_Repairs	Equal variances assumed	9.479	.003	1.864	113	.065	.68235	.36599	-.04273	1.40744
	Equal variances not assumed			2.298	80.898	**.024**	.68235	.29697	.09147	1.27323

6.6.3.3 Summary of the results

Service quality literature shows that other people's experiences can help to inform, shape and influence an individual's expectations and hence their perception of how good a received service is (Jobber, 1998; Zeithaml and Bitner, 2000). It is therefore not surprising to find a difference in satisfaction levels of homeowners who compare their level of service with other people who are going through a similar experience and those who do not. In this case, homeowners who admitted comparing services received had a lower satisfaction level that those who did not with mean differences of 0.69890, 0.68235 for satisfaction with the claim process and repair works, respectively.

In two aspects of homeowner satisfaction (i.e. satisfaction with the **process** and satisfaction with the quality of the **repair works**), homeowners who compared the services they received with others were less satisfied than those who did not. This raises the issue of consistency in the standard and level of services provided by the industry to homeowners. Adherence to industry-wide acceptable standards as well as service providers to provide comparable service offerings would minimise dissatisfaction due to disparity in services on claims of comparable nature. Homeowners' expectations are influenced by several factors, including reports from other people such as friends, relatives or neighbours. In cases where several properties on a street have been flooded, homeowners are insured by different insurance companies. Given that homeowners tend to compare the service they receive, including such aspects as which items (contents or building components) being replaced and which ones are being repaired, a disparity in services may inevitably lead to dissatisfaction.

Whether or not a homeowner compared the service they received with others around did not make any difference in their satisfaction levels with the financial settlement. It is possible that this is due to the fact that it is not easy to tell what the financial settlement of another person is unless they disclose it. In contrast, homeowners may find it easy to make judgment as to whether their own claim process and/or repair works have been better or worse than their perceptions of the same in another person's claim. These two aspects are slightly more apparent to an observer than the actual financial settlement on an insurance claim.

7.1 INTRODUCTION

This chapter presents the analysis and findings of the primary data collected through a questionnaire survey as described in the methodology chapter (refer to section 4.5). It includes a discussion of the selection of analytical methods, the actual data analysis and hypothesis testing. Each hypothesis is tested using the most suitable statistical techniques and the findings are presented showing whether or not the hypothesis was upheld. Although a brief discussion is undertaken in this chapter, the extensive discussion and interpretation of the results will be presented in Chapter 8 of this thesis.

7.2 MULTIPLE REGRESSION ANALYSIS

Multiple regression was one of the statistical techniques used in testing some of the hypotheses in this research. Due to a number of challenges faced during the analysis, it is essential to dedicate a section to outlining what the technique involves, its assumptions and limitations. The key terminologies used in multiple regression are explained, although only an overview is provided. More information on the subject can be obtained in cited literature or any other good statistics textbooks (Berry and Feldman, 1993; Lewis-Beck, 1993; Frees, 1996, Freund and Wilson, 1998; Field, 2000; Tabachnick and Fidell, 2001; Miles and Shevlin, 2001).

Regression analysis is often used to estimate the value of a given parameter based on factors that are considered as influencing that parameter. The parameter to be predicted is referred to as the *dependent variable* (DV) whereas the influencing factors are referred to as *independent* or *predictor variables* (IV). The primary goal of regression analysis is therefore to investigate the relationship between the DV and several IVs (Tabachnick and Fidell, 2001).

When regression analysis is employed, the investigation may be considering the influence of one predictor variable on a dependent variable (simple linear regression) or alternatively the influence of more than one independent variable on a dependent variable (multiple regression analysis). Multiple regression analysis (MRA) is therefore an extension of bivariate of simple linear regression. This results in a general equation which takes the following form, representing the best prediction of a DV from several IVs:

$$Y' = A + B_1 X_1 + B_2 X_2 + \ldots B_K X_K + \varepsilon$$

where

Y' is the dependent variable,

A is the intercept or constant,

B_1, B_2, and B_k are regression coefficients for independent variables X_1, X_2, and X_k, respectively (*n* denotes the total number of variables included);

X_1, X_2, and X_k are the independent variables;

ε is a random variable called the error term.

Multiple regression analysis need not be undertaken "manually" as it can be easily undertaken using statistical software packages such as SPSS and Excel even by 'statistical novices'. When using SPSS to undertake MRA, there are four alternative methods available namely stepwise, forward selection, backward elimination[1], and enter (more formally known as forced entry).

7.2.1 Model accuracy in Multiple Regression

In MRA a number of parameters are used to ascertain how accurate and reliable a mathematical model is. First, the overall accuracy of the model in MRA is measured by the *coefficient of determination* more commonly called *R square* (symbol: R^2). It measures the amount of variation in the dependent variable that is accounted for by the model and assumes values between 0 and 1: the closer to 1 the more accurate the model

[1] Both *forward selection* and *backward elimination* are generally referred to as stepwise methods but SPSS makes a slight distinction. In SPSS the method referred to as *stepwise* is very similar to *forward elimination* but only differs on the rules applied when a variable is eliminated (Field, 2000).

is, barring chance effects (Field, 2000). A model where R^2 is say 0.90 indicates that the independent variables used in the model are accounting for 90% of the factors affecting the value of the dependent variable. It means that the model does a good job (90%) at predicting or estimating the dependent variable.

Another parameter that is very closely related to the R^2 is the *adjusted* R^2 which ideally must be the same or very close to the value of R^2. The *adjusted* R^2 statistic 'corrects' R^2 to show how well the model would apply to the general population from which the sample was drawn. Pallant (2005) recommends that the *adjusted* R^2 should be used instead of the R^2 value where one is using a 'small' sample.

The third consideration that needs to be made when interpreting MR is the Durbin-Watson statistic, which is an indicator of whether or not the assumption of independence of errors is valid. The parameter assumes values from 0 to 4; however Field (2000) suggests that the closer the value is to 2 the better and that values lower than 1 or greater than 3 must certainly be cause for alarm.

The fourth check for model accuracy is the analysis of variance (ANOVA). Here, the test is for whether the model is significantly better at predicting the dependent variable than if the mean of the dependent variables were used (Field, 2000). An *F-ratio* is typically obtained which indicates the ratio of improvement in prediction as a result of fitting the model relative to the inaccuracy that might still exist. If any improvement has occurred the ratio must be greater than 1. An assessment of the statistical significance of the model results can be done by examining the significance value corresponding to the F-ratio in the ANOVA table. This tests the null hypothesis that the probability of the population parameter is zero: the greater the value the more likely that the independent variable is not significant in the model. If the sig. value is greater than .05 (5%), then it may be concluded that the model is not significant. A cut-off point as high as 0.1 (1%) is sometimes used instead of .05.

7.2.2 Multiple Regression Assumptions

As with most statistical techniques, multiple regression has assumptions that need to be satisfied before the technique can be deemed to be suitable for the data. A detailed discussion can be found in chapter 5 of Tabachnick and Fidell (2001). A summary of the data's compliance with these assumptions is presented in the relevant sections where hypotheses were tested using MRA.

7.2.2.1 Sample size

The sample size is often raised as an issue to consider when applying multiple regression. Pallant (2005) points out that the issue of concern here is the generalisability of the findings from the sample employed. Although there is no universal rule on the minimum sample size to which MRA can be applied, there are some guidelines that have been offered in various texts. Pallant (2005), for instance adopts a rather stringent N>50+8m rule, where *N*=sample size and *m*=the number of independent variables. Although a sample size of at least 200 was aimed for, as discussed earlier, this was not achieved due to a low response rate reported in section 6.2.3 of this chapter. However, the data set was deemed to be sufficient for the intended analyses.

7.2.2.2 Normality, linearity, homoscedasticity, independence of residuals

These four assumptions all relate "to various aspects of the distribution of scores and the nature of the underlying relationship between the variables" (Pallant, 2005). Ideally, the data set should satisfy the assumptions. Tests were carried out by inspecting the scatterplots as recommended by Pallant (2005) and where any assumption was violated, the method of dealing with the challenge is discussed under the relevant hypothesis testing.

7.2.2.3 Multicollinearity

Multicollinearity and singularity are another set of assumptions to consider in multiple regression. Multicollinearity exists when two or more independent variables are too strongly correlated (say, $r \geq .9$) between the independent variables (Pallant, 2005). It is ideal that the independent variables in multiple regression analysis should be correlated (preferably $r > .3$) but not too strongly correlated.

There are several ways of checking for multicollinearity using SPSS software and these include checking the bivariate correlation coefficients of the data set, examining the collinearity diagnostics. Although the bivariate correlation can flag up highly correlated independent variables, this method may not pick up more subtle forms of multicollinearity.

The effects of multicollinearity are discussed at length in various statistics texts; Field (2000) cites three effects as follows:

- It limits the size of R, a measure of multiple correlation between IVs and the outcome;
- It makes it difficult to assess the individual importance of predictors (IVs) due to the high correlations and accounting for similar variance in the DV;
- It results in the estimated values of regression coefficients (the values) being unstable from sample to sample.

7.2.2.4 Dealing with Multicollinearity

As already noted in this section, multicollinearity is a situation where independent variables in a regression analysis of a particular data set are strongly correlated. Berry and Feldman (1993) distinguish between perfect multicollinearity and less extreme forms of multicollinearity. Perfect multicollinearity, they argue, is when an independent variable regressed on some independent variables yields an R^2 of precisely 1. They acknowledge that in many instances it is not a case of whether multicollinearity "exists" or "does not exist." Instead, they argue that the issue is the degree of multicollinearity and to what extent it poses a problem.

> "When multicollinearity is present in only a very small amount, there is little reason to be concerned about its impact, but as the degree of multicollinearity increases, its consequences become more pernicious" (Berry and Feldman, 1993: 190).

Berry and Feldman (1993:190) argue that "even a high degree of multicollinearity does not violate the assumptions of regression"; "unless there is perfect collinearity in the data set, the assumptions of regression are not violated." However, there are some problems associated with a high degree of multicollinearity. By increasing standard errors, a high degree of multicollinearity can result in very wide confidence intervals for regression coefficients and very small t-statistics for significance tests (Berry and Feldman, 1993).

Despite reference to the idea of a 'very small amount' of multicollinearity, Berry and Feldman (1993: 192) acknowledge that "there are no tests that provide irrefutable evidence that multicollinearity is or is not a problem." They however concede that there are warning signs of the possibility of multicollinearity; the most commonly used approach is an inspection of the matrix of bivariate correlations. A cut-off, say of .80, is often presented as the limit not to be exceeded by the correlation coefficients of any pairs of variables. This method is seen as inadequate for several reasons discussed by Berry and Feldman (1993:193).

Multicollinearity is not an uncommon phenomenon in social science data sets.

> *if social scientists could collect data using controlled experiments, the observations could be selected so that the independent variables would not be strongly correlated in the sample, and the multicollinearity problem would not be faced. (Berry and Feldman, 1993:188-190).*

As a result of the above rationale, a more flexible approach was adopted to dealing with the issue of multicollinearity in the data set used in this research. Rather than approaching multicollinearity as something that either exists or does not exist, the degree to which multicollinearity might pose a problem was evaluated under each hypothesis that employed MRA (for instance section 7.4 on page 182).

Variance Inflation Factor (VIF) and its reciprocal (Tolerance), a collinearity diagnostic produced in SPSS was used to assess whether multicollinearity exists to an extent that it may be causing a problem in the generated models. The most commonly cited cut off value for VIF is 10 (Field, 2000; Pallant, 2005) but Freund and Wilson (1998) acknowledge there is no 'significance test' and hence the need for practical considerations in determining how large VIF values must be before the degree of multicollinearity affects the estimation of the corresponding coefficient. Based on the advice in Freund and Wilson (1998), a practical approach was used to deal with multicollinearity; if any VIF value is found to be greater than the equivalent statistic for the regression model: $\frac{1}{1-R^2_{\text{model}}}$, then multicollinearity would be deemed to be a problem that could be seriously affecting the estimates of the coefficients. For instance, a model with an R^2 of .856 would have a practical VIF cut off point of 6.94 as shown below.

$$\frac{1}{1-R^2_{\text{model}}} \Rightarrow \frac{1}{1-0.856} = 6.94$$

Equation 7.1 VIF Cut off

7.2.3 Evaluating the influence of individual independent variables

To ascertain whether a given independent variable makes a significant contribution to the model, it is essential to look at the beta values in the "coefficients" table. The standardised coefficients indicate the comparative contribution that each independent variable makes in the model. The beta values are treated as absolute number i.e. the signs are ignored and only the numerical value of numbers are considered. The variable with the largest beta value that is significant makes the strongest unique contribution to explaining the dependent variable, when the variance explained by the other independent variables is controlled for (Pallant, 2005).

7.2.4 Cross-Validation of Models from Multiple Regression Analysis

When MRA assumptions are met (section 7.2.2, from page 176), the model obtained from a sample can be generalised to the relevant population. However, even when the assumptions have been satisfied, a model derived based on a sample will not always be identical to one obtained if the entire population was to be investigated.

> *What an unbiased model does tell us is that on average the regression model from the sample is the same as the population model. However, you should be clear that even when the assumptions are met, it is possible that a model obtained from a sample may not be the same as the population model – but the likelihood is increased of them being the same. (Field, 2000: 130).*

As with many statistical techniques, prediction using MRA does not guarantee every case in the population would conform to the derived model. However, if an unbiased model has been derived using MRA, it can be generalised to the population in terms of the average predictions being likely to be similar.

Cross-validation or the assessment of the accuracy of a model across samples is a way of testing whether a model derived from a sample using MRA accurately represents the entire population. Field (2000) presents two methods of cross-validation of a model which are discussed below, namely using the adjusted R^2 and data splitting.

7.2.4.1 Using Adjusted R^2

The adjusted R^2 is sometimes used as a cross-validation approach for models as it accounts for the loss of predictive power (shrinkage) in the model (R^2) were it to be applied not just to the sample from which it is derived but to the population where the sample was obtained. Although R^2 is a useful alternative method and also recommended for reporting MRA results, especially where the sample size is relatively small (Tabachnick and Fidell, 2001; Pallant, 2005), its use for cross-validation is not without criticism. The main criticism for the adjusted R^2 approach to cross-validation is that it does not say anything regarding the accuracy of the derived equation in predicting scores for an entirely different sample from the same population (Field, 2000).

7.2.4.2 Using data splitting

Data splitting, as a cross-validation approach, involves randomly splitting the data into two equal data sets, computing MRA for both halves of the data and them comparing the results of the models. Such an approach requires large amounts of data, which Field (2000) acknowledges is rarely the case for researchers.

Based on the above discourse on the two alternatives to cross-validation, both methods were used to cross-validate the models generated in the relevant hypothesis that used MRA for analysis. The adjusted R^2 was generated in the SPSS output for the models themselves and this will be referred to in the validation sections of this chapter.

Data splitting was the main method of cross validation used in this study because it allows the researcher to test the performance of the derived model on a 'different' data set from the one used in derived the model. However, the data was not divided in half as suggested by Field (2000) owing to the relatively small sample sizes that would result from such a division. Instead, a randomly selected holdout sample of approximately 5% of the entire data set was used for cross-validation of the models. A 20/80 percent division is proposed by Tabachnick and Fidell (2001) if one is to be able to validate a model by comparing its R^2 with that of the holdout sample. However, a 5% holdout sample was deemed sufficient because a different approach to that proposed in Tabachnick and Fidell (2001) was used to validate the derived models. This involved obtaining a regression equation from the derived models, and then inputting it into an excel spreadsheet where the equation was applied to predict the values of the DV for the individual cases in the hold-out sample. The mean scores of the predicted satisfaction scores values for the hold-out sample was then compared with the mean scores of the DV values of the sample used to derive the model. Such an approach was based on the advice by Field (2000), urging that the comparison of interest in the cross-validation exercise was not the predicted DV scores for individual respondents in the hold-out sample data set with those in main model, but rather the average predicted scores from the hold out sample data set with the average scores from the DV values in the main data set.

7.3 RESULTS OF HYPOTHESES TESTING

A set of hypotheses were developed for this study as discussed in section 4.5.1 of this thesis. Data analyses were conducted to test the previously stated research hypotheses (refer to section 4.5.1 from page 94). Each hypothesis was investigated using a suitably selected statistical technique as described in the relevant sections of this chapter.

7.4 HYPOTHESIS 1 (H_1)

H_1: The items that make up each of the three scales used to evaluate service quality of the three key services received by homeowners during flood-damage insurance claims can be reduced to a small set of underlying factors.

This hypothesis investigated the incidence of underlying factors within the three service providers' service quality scales by using exploratory principal components factor analysis. Existence of a small set of factors would lead to an examination of how much of the variance in overall homeowner satisfaction can be explained by the factors. This would consequently determine the best predictor of homeowner satisfaction with the various services provided to homeowners during an insurance claim for the repair of flood-damaged property.

As discussed in section 4.5.3 (from page 99) of this study, elements of the SERVQUAL framework were incorporated into the questionnaire that was used in the main phase of this research's primary data collection. In particular, these elements are contained in the three scales used to evaluate homeowners' service experience with the services of insurance companies, loss adjusters and contractors (refer to sections 2, 3 and 4 of the questionnaire, respectively – Appendix I). As a result, the SERVQUAL procedure is briefly discussed together with the extent to which it was (or was not) followed, as the case maybe.

Based on the studies that have employed the SERVQUAL instrument, a procedure was adopted for the analysis of Hypothesis 1. Apart from any relevant preliminary descriptive analyses, factor analysis is normally the first to be conducted, with a view to either reduce the items on the scale to a few factors or to confirm the existence of the five SERVQUAL dimensions. For instance, Hoxley (2000) used exploratory factor analysis to examine the factor structure of the data, which resulted in four factors later named 'what', 'how', 'when' and 'who'. However, Stafford, *et al.* (1998) used confirmatory factor analysis aided by LISREL software to determine the existence of the five SERVQUAL factors found by other previous studies. In this study, exploratory factor analysis was used to try and reduce the multivariate service quality scales into a few factors.

The second stage usually involves matching the expectations with their respective perception items for each of the 22 SERVQUAL items, in order to calculate individual gap scores. This is applicable where the scale uses duo sets of the question; say 22 expectations items with their respective perception items for each of the 22 SERVQUAL items. This was not applicable in the current study, which adopted a modification that employs one set of questions in which customers express their perception of the service with respect to how well they think the service measured up to what their expectations were. The gap scores approach supported by authors such as Gronroos (1984) was avoided due to the amount criticism it has drawn in recent years. The use of more user-friendly single statements that measure both expectations and perceptions of service quality were favoured, having been used by Hoxley (2000) with satisfactory results.

7.4.1 Reliability of the scales

Although the reliability test in the context of the SERVQUAL framework is typically conducted on the five-dimension scale, it was decided that it should be performed on the entire scale containing all 22+ variables for each individual service provider. This would provide an assessment of the entire scale's reliability.

Assessment of reliability of the service quality scales of the three key services revealed that all three had extremely good internal consistency and yielded the following Cronbach's alpha coefficients which were well above the recommended value of 0.7 (Pallant 2005):

- 0.986 for the scale used to evaluate Insurers services (refer to Appendix K),
- 0.994 for the scale used to evaluate Loss Adjusters' services (refer to Appendix K),
- 0.993 for the scale used to evaluate Contractors' services (refer to Appendix K).

7.4.2 An Attempt at reducing data by factor analysis

Factor Analysis is a data reduction technique, which is often used by researchers for either exploratory or confirmatory purposes. It allows researchers to examine a large number of variables for a way that the data may be reduced or summarised into a few number of factors or components to form coherent subsets that are relatively independent from one another (Tabachnick and Fidell, 2001; Pallant, 2005).

As indicated, previous research using the SERVQUAL model has used factor analysis to explore and/or confirm the existence of a few underlying components that reflect the correlations that exist among the variables under consideration. This is how the five factors associated with the SERVQUAL framework were derived in the first place, using exploratory Factor Analysis.

Therefore, exploratory principal component factor analysis was conducted across all the three service providers' service measurement scales (refer to Appendix I, sections 2-4) using SPSS Version 12. This was done with a view to reduce the variables on each scale into a few manageable underlying factors. Such a result would then enable further analysis to determine, using multiple regression analysis, which factors are the most significant determinants of homeowner satisfaction in flood damage insurance claims.

7.4.3 Factor Analysis: Insurance Services

The 24 items of the questionnaire which were used to evaluate the insurance services were subjected to principal components analysis (PCA). Prior to performing PCA, an assessment of the suitability of the data for factor analysis was conducted. The correlation matrix (refer to Appendix L, page 308) revealed that all the coefficients were .3 and above, as recommended by Pallant (2005). In addition, the Kaiser-Meyer-Oklin value was .953, which exceeds the recommended value of .6 (Kaiser, 1970, 1974; Pallant, 2005), while the Barlett's Test of Sphericity (Barlett, 1954) reached a statistical significance, thereby supporting the suitability of factor analysis.

Principal component analysis however yielded no more than one factor, which suggests that all the items are measuring the same underlying issues, or at least they were perceived to be, by respondents in this data set. This is also evidenced by the high degree of correlation coefficients which signalled potential problems of multicollinearity[2] within the data when it comes to multiple regression, an issue that is discussed at length later on in this chapter. A set of reliable and interpretable factors of service quality could not be determined.

[2] Multicollinearity occurs when independent variables in a multiple regression model are too highly correlated (r=.9 and above) (Pallant 2005).

7.4.4 Factor Analysis: Loss Adjuster Services

The 27 items of the questionnaire which were evaluating Loss Adjusters' services were subjected to principal components analysis (PCA). The correlation matrix (refer to Appendix L, page 315) revealed that all the coefficients were .3 and above, as recommended by Pallant (2005). In addition, the Kaiser-Meyer-Oklin value was .793, which exceeds the recommended value of .6 (Kaiser, 1970, 1974; Pallant, 2005), while the Barlett's Test of Sphericity (Barlett, 1954) reached a statistical significance, thereby supporting the factorability of the correlation matrix.

Principal component analysis revealed only one factor. A set of a few reliable and interpretable factors of service quality could not be determined. This may be due to all the variables measuring the same underlying issues, or at least they were perceived as such, by respondents in this data set. As in the case of the insurers' scale, there was evidence of high correlation coefficients.

7.4.5 Factor Analysis: Contractors' Services

The 33 items of the questionnaire evaluating contractors' services were subjected to principal components analysis (PCA) using SPSS Version 12. Prior to performing PCA, an assessment of the suitability of the data for factor analysis was conducted. The correlation matrix (refer to Appendix L, page 319) revealed that all the coefficients were .3 and above, as recommended by Pallant (2005). In addition, the Kaiser-Meyer-Oklin value was .936, which exceeds the recommended value of .6 (Kaiser, 1970, 1974; Pallant, 2005), while the Barlett's Test of Sphericity (Barlett, 1954) reached a statistical significance, thereby supporting the factorability of the correlation matrix.

Principal component analysis however yielded no more than one factor, which suggests that all the items are measuring the same underlying issues, or at least they were perceived to be, by respondents in this data set. Similar to the two other scales discussed earlier (insurers and loss adjusters), there were instances of variables that are highly correlated with coefficients of $r>0.9$. A set of a few reliable and interpretable few factors of service quality could not be determined.

7.4.6 Departure from the Factor Analysis procedure

The results of the principal component factor analysis (discussed in sections 7.4.3, 7.4.4 and 7.4.5) show that there is insufficient evidence confirming the existence of a set of reliable and interpretable factors of service quality in the data set used for this study. Instead, analysis of the three service quality scales only yielded one factor (in case of loss adjusters and contractors scales) or two factors (for insurers scale). This is in contrast to other studies that have used the SERVQUAL framework, where five factors (*tangibles, reliability, responsiveness, assurance* and *empathy*) are cited in. The possible reasons for this unsuccessful reduction of the multiple items from the three scales into a set of few factors are discussed in Chapter 8, the discussion chapter of this thesis.

It was also deemed necessary and pragmatic to depart from the SERVQUAL procedure initially intended for analysing hypothesis one (H_1) to conduct other relevant and meaningful analyses to interpret the data without necessarily using factor analysis. Therefore alternative analysis was conducted to determine the potential influence of the various items on each scale used to measure homeowners' perceptions of the individual service providers' offerings during the repair of the flood damaged property. Multiple regression analysis was the method of choice for this purpose. However, instead of using a standard 'enter' method, the 'stepwise method' of MRA was preferred (refer to section 7.5.1 on page 188 for further discussion). The 'enter' method is generally recommended where independent variables can be justified by previous research or are theoretically proven to be important (Field, 2000). However, as pointed out in sections 7.4.3, 7.4.4 and 7.4.5 of this study, it was not possible to reduce the service quality items into reliable and interpretable factors of customer experience. As a result, a more iterative process such as stepwise was deemed to be useful in selecting the most significant independent variables (IVs) while also providing estimates of their relative importance in predicting homeowner satisfaction (the DV). A brief discussion of the stepwise MRA technique is entertained in section 7.5.1 while the rest of section 7.5 herein presents the results of the alternative analysis using the stepwise MRA.

7.5 HYPOTHESIS 2 (H_2)

H_2: The same (or similar) service quality variables will predict homeowner satisfaction with each of the three service providers (Insurers, Loss Adjusters and contractors).

This hypothesis was intended to investigate and identify a few key antecedents of homeowner satisfaction out of the various dimensions of service quality scales used to evaluate homeowners' perceptions to the services they received from insurance companies, loss adjusting forms and contractors, during the repair of the flood-damaged property. As discussed in sections 7.4.3, 7.4.4 and 7.4.5, an attempt to reduce each of the scales into a few underlying factors using principal component factor analysis revealed only one meaningful factor in each of the three scales. It was deemed important for this research to provide practitioners with an indicator of the key items that make the most significant contribution to homeowner satisfaction with each of the three individual service providers. For this purpose, stepwise MRA was chosen as the most suitable data analysis technique.

7.5.1 Use of Stepwise Method of Multiple Regression

Stepwise MRA method was selected and deemed most suitable for further investigating the first hypothesis subsequent to the initial analysis described in section 7.4 of this chapter. Stepwise MRA is probably the most widely used form of regression analysis for developing models (Everit and Dunn, 1991; Norsusis, 1995; Bryman and Cramer, 1999). In this technique, variables are selected by SPSS based on mathematical criteria. This is done by searching for the IV which makes the best prediction of the DV, i.e. the IV with the highest simple correlation with the DV (Field, 2000). Each time a predictor variable (Independent variable) is added to the regression equation, a removal test is conducted to identify the least useful variable in predicting the dependent variable. This leads to a constant reassessment of the model to see if any redundant variables can be removed (Field, 2000). In other words, stepwise MRA aims to select variables which best predict the DV while continuously re-assessing the regression model (each time a variable is added). All that the researcher verifies is the theoretical validity of the variables.

Stepwise MRA, as a category of techniques, includes the forward, backward, and stepwise methods, all of which rely on statistical selection of variable. The simple stepwise in SPSS was used rather than forward or backward approaches.

Despite the popularity, Stepwise MRA, as a regression technique, is not without controversy (Bryman and Cramer, 1999). For instance, Field (2000) criticises the method on the following grounds:

- Stepwise implies taking away methodological decision-making in the selection of predictor variables from the researcher to the machine, and

- Models derived from stepwise regression thrive on small statistical differences in their semi-partial correlation, which may contrast dramatically with the theoretical importance of a predictor to a model.

However, in the real world of research, other pragmatic considerations may necessitate the use of methods like stepwise regression and hence its consideration for this research. Miles and Shevlin (2001) present four ways of dealing with multicollinearity, one of them being the use of stepwise regression. They advise that where a researcher is only interested in purely predicting a dependant variable without consideration of the theoretical links the technique might be suitable.

Sections 7.5.3, 0 and 7.5.6 present three regression models derived using stepwise MRA, one for each service provider (Insurers, Loss adjusters, and contractors). A list of variables (IVs) retained from the stepwise analysis, due to their significant contribution in explaining overall homeowner satisfaction with each of the individual service provider (dependent variable) is shown for each model.

7.5.2 Hold Out Sample for H_2 model validation

The data set was divided into roughly into a 95%/5% division with the five percent being excluded from the model data and kept as a *holdout sample*. The holdout sample, consisting of data from the same population from which the sample used for modelling was drawn, was then used for checking the accuracy of models generated. The use of a holdout sample was based on the data splitting approach recommended by Field (2000) and Tabachnick and Fidell (2001). Selection of cases (homeowners) to be kept in the holdout samples was done randomly using SPSS's function for 'selecting cases' by random selection.

7.5.3 Data compliance with assumptions for MRA

A multicollinearity check was conducted using the formula below (refer to discussion in Section 7.2.2.4, from page 178) which revealed data compliance with this assumption.

$$\frac{1}{1-R^2} \Rightarrow \frac{1}{1-0.835} = 6.060$$

Equation 7.2 VIF Practical Cut-off

All the VIF values were less than the above cut-off which happens to be more stringent than the commonly quoted 10 cut off.

7.5.4 Satisfaction with Insurance Companies' Services

Using the stepwise method, a regression model was estimated for homeowner satisfaction with the services of the insurance company (oSAT_Insurer) during the repair of flood damaged domestic property. As presented in model summary in Table 7.14, a significant model emerged ($F_{2,54}$ = 136.174, $p<0.0001$). An R^2 value of .835 indicates that a high proportion of variance (84%) is explained by the model.

The Beta coefficient values in Table 7.1 show that, between the two statistically selected independent variables, insurer trustworthiness makes a larger statistically significant contribution in predicting homeowner satisfaction with insurance company services in claims for the repair of flood damage domestic property than insurers staying involved throughout the claim. Among the twenty service quality variables, homeowners' perception of insurer trustworthiness and insurers staying involved throughout the claim are the best predictors of homeowner satisfaction with insurance company services.

Table 7.1 Multiple Regression Analysis [Insurers]

Model Summary[c,d]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.870[a]		.758	.753	.807
2	.914[b]	.968	**.835**	.828	.673

a. Predictors: (Constant), INSURER - trustworthy

b. Predictors: (Constant), INSURER - trustworthy, Insurer - stayed involved

c. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

d. Dependent Variable: oSAT_Insurer

ANOVA[c,d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111.969	1	111.969	172.022	.000[a]
	Residual	35.799	55	.651		
	Total	147.769	56			
2	Regression	123.318	**2**	61.659	**136.174**	.000[b]
	Residual	24.451	**54**	.453		
	Total	147.769	56			

a. Predictors: (Constant), INSURER - trustworthy

b. Predictors: (Constant), INSURER - trustworthy, Insurer - stayed involved

c. Dependent Variable: oSAT_Insurer

d. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95% Confidence Interval for B Lower Bound	95% Confidence Interval for B Upper Bound	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.332	.319		1.039	.303	-.308	.971					
	INSURER - trustworthy	.909	.069	.870	13.116	.000	.770	1.048	.870	.870	.870	1.000	1.000
2	(Constant)	.296	.266		1.111	.272	-.238	.829					
	INSURER - trustworthy	.598	.085	**.573**	7.055	.000	.428	.768	.870	.693	**.391**	.465	**2.152**
	Insurer - stayed involved	.364	.073	**.407**	5.006	.000	.218	.510	.826	.563	**.277**	.465	**2.152**

a. Dependent Variable: oSAT_Insurer

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The coefficients table has useful information including the part correlations; if these values are squared, it provides an indication of the total contribution of that variable to the R^2, i.e. the individual variable contribution in explaining the dependent variable and how much the R^2 would drop if the variable was removed from the model (Pallant, 2005). This assessment shows that satisfaction with the "insurer trustworthiness" makes a unique contribution to R^2 of 15% on its own, while the "insurers staying involved" in the claim make a unique contribution of 8%. The rest of the variance in R^2 is due to overlap or shared variance between the two independent variables.

More statistical information on this hypothesis can be found in SPSS outputs in Appendix M (from page 322).

7.5.5 Satisfaction with Loss Adjusting Companies' Services

Using the stepwise method, a regression model was estimated for homeowner satisfaction with the services of the insurance company (oSAT_Loss Adjuster) during the repair of flood damaged domestic property. As presented in model summary in Table 7.2, a significant model emerged ($F_{3,65}$ = 193.076, p<0.0001). An R^2 value of .899 indicates that a high proportion of variance (90%) is explained by the model.

Among the twenty six service quality variables, the best predictors of homeowner satisfaction with loss adjusters' services were:

- The loss adjuster provided personal attention and were caring and understanding,
- The loss adjusting firm provided prompt services (such as decisions, payments) and told homeowners when they would perform services for me, and
- The loss adjuster maintained accurate records of the claim/repair works.

The three variables explain 90% of the variance found in satisfaction with the loss adjuster's services. The Beta coefficient values (refer to Table 7.2) show that, among the three statistically selected independent variables, "personal attention" to the homeowner during the claim makes a largest statistically significant contribution in predicting homeowner satisfaction with loss adjusters' followed by "prompt services as promised" and “maintained accurate records”. Based on the part correlations from the coefficients table, these three variables each make a unique contribution to R^2 of 4.5%, 1.2% and 0.8%, respectively. The large portion of the variance in R^2 is attributable to overlap or shared variance among the three independent variables.

More statistical information on this hypothesis can be found in SPSS outputs in Appendix M (from page 327).

Table 7.2 Multiple Regression Analysis [Loss Adjusters]

Model Summary[d,e]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921[a]		.848	.846	.651
2	.944[b]		.891	.888	.554
3	.948[c]	1.000	**.899**	.894	.538

a. Predictors: (Constant), Prompt Services as Promised

b. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention

c. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention, LAdj - maintained records

d. Unless noted otherw ise, statistics are based only on cases for w hich "HoldOut Sample Excluded" = Yes.

e. Dependent Variable: oSAT_Loss Adjuster

ANOVA[d,e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158.308	1	158.308	373.895	.000[a]
	Residual	28.368	67	.423		
	Total	186.676	68			
2	Regression	166.409	2	83.204	270.953	.000[b]
	Residual	20.267	66	.307		
	Total	186.676	68			
3	Regression	167.841	3	55.947	193.076	.000[c]
	Residual	18.835	65	.290		
	Total	186.676	68			

a. Predictors: (Constant), Prompt Services as Promised

b. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention

c. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention, LAdj - maintained records

d. Dependent Variable: oSAT_Loss Adjuster

e. Selecting only cases for w hich "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.928	.187		4.977	.000	.556	1.301					
	Prompt Services as Promised	.839	.043	.921	19.336	.000	.752	.925	.921	.921	.921	1.000	1.000
2	(Constant)	.817	.160		5.096	.000	.497	1.137					
	Prompt Services as Promised	.473	.080	.520	5.911	.000	.314	.633	.921	.588	.240	.213	4.704
	LADJ - personal attention	.388	.076	.452	5.136	.000	.237	.539	.913	.534	.208	.213	4.704
3	(Constant)	.761	.158		4.822	.000	.446	1.076					
	Prompt Services as Promised	.304	.109	.333	2.785	.007	.086	.521	.921	.326	.110	.108	9.238
	LADJ - personal attention	.395	.073	**.460**	5.376	.000	.248	.541	.913	.555	.212	.212	4.712
	LAdj - maintained records	.174	.078	.200	2.223	.030	.018	.330	.862	.266	.088	.192	5.197

a. Dependent Variable: oSAT_Loss Adjuster

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

7.5.6 Satisfaction with Contractors' Services

Using the stepwise method, a regression model was estimated for homeowner satisfaction with the services of the contractor (oSAT_Contractor) during the repair of flood damaged domestic property. As presented in the model summary in Table 7.2, a significant model emerged ($F_{3,65}$ = 193.076, p<0.0001). An R^2 value of .888 indicates that a high proportion of variance (89%) is explained by the model (refer to Table 7.3).

Among the thirty-three service quality variables, the six best predictors of homeowner satisfaction with contractors' services, in order of contribution to predicting the dependent variable, were:

- "felt safe in my dealings with the contractor's employees."
- "The contractor did the work in a timely manner."
- "The contractor always kept the property tidy."
- "The size of the contractor's organisation was appropriate for the scale of work."
- "The contractor's employees had the knowledge and competence to solve problems."
- "The contractor's organisation had only my best interests at heart."

The six variables explain 89% of the variance in satisfaction with the loss adjuster's services. An inspection of the Beta coefficient values in the coefficients table (*refer to* Appendix M, from page 333) shows that the above six statistically selected independent variables only make small unique contribution in predicting homeowner satisfaction with contractors' services (between 0.4% and 2.4%). The large portion of the variance in R^2 is attributable to overlap or shared variance among the six independent variables.

More statistical information on this section of the hypothesis can be found in SPSS outputs in Appendix M (from page 333).

Table 7.3 Multiple Regression Analysis [Contractors]

Model Summary[h,i]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.893[a]		.798	.796	.792
2	.918[b]		.842	.838	.706
3	.929[c]		.862	.857	.663
4	.934[d]		.873	.867	.640
5	.939[e]		.882	.874	.622
6	.942[f]		**.888**	.879	.609
7	.940[g]	.933	.884	.877	.616

a. Predictors: (Constant), Ktor - had my interests at heart

b. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with

c. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org.

d. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner

e. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy

f. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contracto org., Ktor - did work in timely manner, Ktor - kept property tidy, Ktor - knowledge & competence

g. Predictors: (Constant), Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy, Ktor - knowledge & competence

h. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

i. Dependent Variable: oSAT_Contractor

7.5.7 Validation of Satisfaction Model – Insurance Services

The MRA equation for satisfaction with the Insurance company services, derived from the constant and unstandardised coefficients (Table 7.4), is shown below.

$$Y' = 0.296 + (0.598X_1) + (0.364X_2)$$

Where X_1 and X_2 are the Independent Variables in the model

Table 7.4 Coefficients Table (DV = "oSAT_Insurer")

Coefficients[a,b]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.332	.319		1.039	.303
	INSURER - trustworthy	.909	.069	.870	13.116	.000
2	(Constant)	**.296**	.266		1.111	.272
	INSURER - trustworthy	**.598**	.085	.573	7.055	.000
	Insurer - stayed involved	**.364**	.073	.407	5.006	.000

a. Dependent Variable: oSAT_Insurer

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The predicted mean score for "oSAT_Insurer" for the hold out sample is 3.78 whereas the actual mean scores from the sample used to develop the model was 4.20, representing an average prediction error of 1%. This is a modest result meaning that the model is validated as 99% accurate in predicting the average satisfaction scores of a different sample (in this case the hold out sample) drawn from the same population.

The adjusted R^2 is cited as an alternative method of cross-validation of multiple regression models (Field, 2000) in that it says something about how much variance in the dependent variable would be accounted for had the model been derived from the population from which the sample was drawn. Reference is made to Table 7.1 where the model's adjusted R^2 is .828 shows only a small shrinkage in predictive power compared to the R^2 of .835. This bears out the above validation results from the hold out sample.

Table 7.5 Model Validation - Prediction of Satisfaction on holdout sample

	INSURER			LOSS ADJUSTER				CONTRACTOR							oSAT_Insurer			oSAT_Loss Adjuster			oSAT_Contractor		
	Stayed Involved	Trustworthy	oSAT_Insurer	Prompt service as promised	Personal Attention	Maintained Records	oSAT_Loss Adjuster	c_myinte	c_safefl	c_ogsize	c_wktime	c_proptd	c_knowlg	oSAT_Contractor	Regression Prediction	Variance (Predicted -v- Actual)	% of VAR	Regression Prediction	Variance (Predicted -v- Actual)	% of VAR	Regression Prediction	Variance (Predicted -v- Actual)	% of VAR
HOS_1	0	0	1	1	0	0	1	0	3	2	1	1	2	1	0.30	- 0.70	-70%	0.91	- 0.09	-9%	2.22	1.22	122%
HOS_2	4	4	4	3	3	4	4	1	1	2	1	2	3	2	4.14	0.14	4%	3.40	- 0.60	-15%	1.67	- 0.33	-16%
HOS_3	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4.14	0.14	4%	4.25	1.25	42%	3.91	0.00	0%
HOS_4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6.07	0.07	1%	6.00	- 0.00	0%	6.07	0.07	1%
HOS_5	3	4	5	4	4	4	4	3	2	2	2	2	2	3	3.78	- 1.22	-24%	4.21	0.01	0%	2.41	- 0.59	-20%
HOS_6	5	5	5	5	5	5	5	4	4	4	3	4	4	4	5.11	0.11	2%	5.13	0.13	3%	3.78	- 0.22	-5%
HOS_7	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6.07	0.07	1%	6.00	- 0.00	0%	6.07	0.07	1%
Regression Sample Means			4.2				4.2							3.91	4.23	0.03	1%	4.27	0.07	2%	3.73	- 0.18	-5%

7.5.8 Validation of Satisfaction Model – Loss Adjusters' Services

The MRA equation for satisfaction with the Insurance company services, derived from the constant and unstandardised coefficients (Table 7.4), is shown below.

$$Y' = 0.761 + (0.304X_1) + (0.395X_2) + (0.174X_3)$$

Where X_1 and X_2 are the Independent Variables in the model

Table 7.6 Coefficients Table (DV = "oSAT_Loss Adjuster"

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.928	.187		4.977	.000
	Prompt Services as Promised	.839	.043	.921	19.336	.000
2	(Constant)	.817	.160		5.096	.000
	Prompt Services as Promised	.473	.080	.520	5.911	.000
	LADJ - personal attention	.388	.076	.452	5.136	.000
3	(Constant)	**.761**	.158		4.822	.000
	Prompt Services as Promised	**.304**	.109	.333	2.785	.007
	LADJ - personal attention	**.395**	.073	.460	5.376	.000
	LAdj - maintained records	**.174**	.078	.200	2.223	.030

a. Dependent Variable: oSAT_Loss Adjuster

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The predicted mean score for "oSAT_Loss Adjuster" for the hold out sample is 4.27 whereas the actual mean scores from the sample used to develop the model was 4.20, representing an average prediction error of 2%. This is a good result meaning that the model is validated as 98% accurate in predicting the average satisfaction scores of a different sample (in this case the hold out sample) drawn from the same population.

The adjusted R^2 is cited as an alternative method of cross-validation of multiple regression models (Field, 2000) in that it says something about how much variance in the dependent variable would be accounted for had the model been derived from the population from which the sample was drawn. Reference is made to Table 7.2 where the model's **adjusted R^2** is .894 shows only a small shrinkage in predictive power compared to the R^2 of .899. This bears out the above validation results from the hold out sample.

7.5.9 Validation of Satisfaction Model – Contractors' Services

The MRA equation for satisfaction with the Insurance company services, derived from the constant and unstandardised coefficients (Table 7.4), is shown below.

$$Y' = 0.349 + (0.153X_1) + (0.340X_2) + (0.191X_3) + (0.286X_4) + (-0.212X_5) + (0.195X_6)$$

Where X_1 and X_2 are the Independent Variables in the model

Table 7.7 Coefficients Table (DV = "oSAT_Contractor")

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
6	(Constant)	**.349**	.183		1.907	.060
	Ktor - had my interests at heart	**.153**	.093	.177	1.641	.105
	Ktor - felt safe to deal with	**.340**	.083	.359	4.081	.000
	Ktor - size of contractor's org.	**.191**	.071	.191	2.703	.008
	Ktor - did work in timely manner	**.286**	.080	.307	3.571	.001
	Ktor - kept property tidy	**-.212**	.080	-.217	-2.637	.010
	Ktor - knowledge & competence	**.195**	.095	.190	2.061	.043

a. Dependent Variable: oSAT_Contractor

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The predicted mean score for "oSAT_Contractor" for the hold out sample is 3.73 whereas the actual mean scores from the sample used to develop the model was 3.91, representing an average prediction error of -5%. This is a good result meaning that the model is validated as 95% accurate in predicting the average satisfaction scores of a different sample (in this case the hold out sample) drawn from the same population.

The adjusted R^2 is cited as an alternative method of cross-validation of multiple regression models (Field, 2000) in that it says something about how much variance in the dependent variable would be accounted for had the model been derived from the population from which the sample was drawn. Reference is made to Table 7.3 where the model's adjusted R^2 is .879 shows only a small shrinkage in predictive power compared to the R^2 of .888. This bears out the above validation results from the hold out sample.

7.5.10 Comparison of satisfaction determinants for the three services

Table 7.8 presents a comparison of the predictors of the three key services in insurance claims for the repair of flood damaged domestic property. It seems that the variables which best predict satisfaction with each individual service provider will differ from service to service, even if the service quality scales are quite similar in design.

Table 7.8 Comparison of satisfaction predictors

	INSURERS	LOSS ADJUSTERS	CONTRACTORS
1.	Insurer trustworthiness	Providing personal attention and were caring and understanding	Feeling safe in dealing with the contractor's employees
2.	Staying involved throughout the claim	Providing prompt services (such as decisions, payments) and informing homeowners when to expect services	Performing the work in a timely manner
3.		Maintaining accurate records of the claim/repair works	Keeping the property tidy
4.			Size of the contractor's organisation to be appropriate for the scale of work
5.			Workmen to demonstrate knowledge and competence to solve problems
6.			Having the homeowner's best interests at heart

7.6 HYPOTHESIS 3(H_3)

H_3: Overall homeowner satisfaction with the services received during insurance claims for the repair of flood-damaged property can be measured by multiple satisfaction variables, evaluating the process, financial aspects and the completed repair works.

This hypothesis was designed to provide a rationale for the development of the dependent variable (homeowner satisfaction) to be used in any subsequent analyses, particular regression model development. As discussed in Chapter 4 (section 4.5.3, from page 99), data on homeowner satisfaction had been collected on several variables. It was necessary to explore these variables to discover if they were actually measuring the same or different underlying processes. For this purpose, factor analysis, a data reduction technique was used. If variables were found to be measuring the same underlying processes, it would be necessary to either use the most eligible variable or consolidate the relevant variables into composite variables and thereby have fewer variables overall.

7.6.1 Multiple Measures of Satisfaction

As discussed in Chapter 4 (section 4.5.3, from page 99), respondents were asked to indicate their perceptions of and their verdict on their OVERALL service experience on a multiple scale of three questions (from questions 5.4-5.6 in the questionnaire in Appendix I, from page 289). As a result a number of variables were derived to measure satisfaction in this study, as follows:

1. Overall satisfaction with the process of handling the claim (OSAT_Process),
2. Overall satisfaction with the financial settlement of the claim (OSAT_Financial),
3. Overall satisfaction with the finished repair/restoration work on the property (OSAT_Repairs).

All the three variables above were measured using an interval scale (i.e. 0-6, with 0 denoting ‘very dissatisfied’ and 6 denoting ‘very satisfied’. The use of the interval scale was based on the rationale that satisfaction is largely a matter of degree rather than an all or nothing phenomenon.

The key question faced by the researcher here was whether to use a single composite measure of satisfaction or multiple measures of the property. Literature does provide support for the use of multiple measures for satisfaction (Nunnally, 1978, Johnson and Fornell, 1991; Torbica, 1997). This is not surprising considering that multiple measures will inevitably provide a basis for comparison to determine validity and reliability. However, the use of multiple measures of satisfaction should be justified and the various variables must be seen to be measuring different aspects of satisfaction, hence the decision to use factor analysis to explore this (*after* Soetanto, 2002).

7.6.2 Reduction of Multiple Measures of Satisfaction using PCA

Principal components analysis (PCA) is a useful statistical technique for reducing a single set of variables being investigated with a view to combine them into a few factors that reflect the underlying process that are deemed to have created the observed correlations among the variables. In this case, exploratory factor analysis was chosen, whose principal aim is to help one to:

> *[…] describe and summarize data by grouping together variables that are correlated. The variables themselves may or may not have been chosen with the potential underlying processes in mind. Exploratory FA is usually performed in the early stages of research, when it provides a tool for consolidating variables and for generating hypotheses about underlying processes (Tabachnick and Fidell, 2001: 583-584).*

The three multiple measures of satisfaction on which data was collected in the questionnaire survey were subjected to principal components analysis (PCA) using SPSS version 12 to investigate whether or not the three variables were measuring the same underlying issues. However, prior to performing PCA, the data set was examined for compliance with the basic assumptions associated with factor analysis. Firstly, the correlation matrix was inspected revealing coefficients of .5 and above. The Kaiser-Meyer-Oklin value was 0.7 which exceeds the recommended value of .6, while the Bartlett's Test of Sphericity was also compliant, reaching statistical significance at $p<.0001$. These preliminary observations (refer to Table 7.10) showed that the data set was suitable for factor analysis.

Principal components analysis revealed the presence of 2 components with eigenvalues exceeding 1, explaining 55.411 per cent and 35.978 per cent of variance respectively, and 91.389 per cent cumulatively (Table 7.10). Although an inspection of the screeplot (*refer to Appendix N from page 340*) may suggest only one dominant component, the decision to extract and retain two components for further analysis using the Varimax rotation was based on the advice by Pallant (2005: 188) for flexibility as it is often necessary to:

[...] go back and play around with the number of components that you have decided to extract (try both one more and one less.

In addition, although the three measures are correlated (r>.539) (refer to correlation matrix in Table 7.9), they are not too strongly correlated, suggesting the possibility of the items measuring different things, hence the decision to extract two components.

Table 7.9 Initial PCA Solution

Correlation Matrix

		OSAT_CLAIM PROCESS	OSAT_ FINANCIAL ASPECTS	OSAT_ REPAIRS
Correlation	OSAT_CLAIM PROCESS	1.000	.740	.539
	OSAT_FINANCIAL ASPECTS	.740	1.000	.573
	OSAT_REPAIRS	.539	.573	1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.688
Bartlett's Test of Sphericity	Approx. Chi-Square	139.736
	df	3
	Sig.	.000

Communalities

	Initial	Extraction
OSAT_CLAIM PROCESS	1.000	.786
OSAT_FINANCIAL ASPECTS	1.000	.810
OSAT_REPAIRS	1.000	.643

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.239	74.622	74.622	2.239	74.622	74.622
2	.503	16.767	91.389			
3	.258	8.611	100.000			

Extraction Method: Principal Component Analysis.

Rotation was carried out to simplify the factor structure as well as 'improve interpretability' of the factors (Tabachnick and Fidell, 2001). The rotation (refer to Table 7.10) yielded reasonably perfect structure with one of the three variables showing a strong loading on only one component while the other two variables showed loadings on both components, albeit with one being more dominant than the other. The interpretation of the two components seems consistent with anecdotal evidence gleaned from the exploratory interviews.

Table 7.10 PCA Components Extraction (Multiple Satisfaction Measures)

Rotated Component Matrix[a]

	Component	
	1	2
OSAT_CLAIM PROCESS	**.903**	
OSAT_FINANCIAL ASPECTS	**.866**	.334
OSAT_REPAIRS	.311	**.950**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	1.662	55.411	55.411
2	1.079	35.978	91.389

Extraction Method: Principal Component Analysis.

The two factors extracted after the Varimax rotation were subsequently renamed to account for the merging of components and also to create unique variable names that could be distinguished in any subsequent analyses. Table 7.11 shows the two new components or overall Satisfaction measures as “OSAT_Process & Settlement” and “OSAT_Repair Works.” The first variable (OSAT_Process & Settlement) was the product of computing the mean scores of the two variables (“OSAT_CLAIM PROCESS” and “OSAT_FINANCIAL ASPECTS”) from which the factor was derived using SPSS’s variable computation facility. The second component was derived by simply copying the existing “OSAT_REPAIRS” variable into a new variable and renaming it to “OSAT_Repair Works.” These two measures of satisfaction are used in any subsequent analyses that employ homeowner satisfaction as a dependent variable.

Table 7.11 Renaming the Extracted Components

	Component		Variable Name	**Renamed Components**
	1	2		
OSAT_CLAIM PROCESS	**.903**		OSAT_CLAIM PROCESS	OSAT_Process & Settlement
OSAT_FINANCIAL ASPECTS	**.866**	.334	OSAT_FINANCIAL ASPECTS	
OSAT_REPAIRS	.311	**.950**	OSAT_REPAIRS	OSAT_Repair Works

7.6.3 A composite/single Measure of Satisfaction

Since there was no single measure of overall satisfaction in the questionnaire, it was necessary to combine the two resultant variables derived in Table 7.11. Using the two new variables, "OSAT_Process & Settlement" and "OSAT_Repair Works", a new single satisfaction variable, Overall homeowners' satisfaction with all the services (OSAT_ALL) was derived using SPSS's variable computation facility using the mean scores. This new measure of satisfaction was used alongside the other two in subsequent analyses that employ homeowner satisfaction as a dependent variable.

7.7 HYPOTHESIS 4(H_4)

H_4: Of the three main service providers (insurers, loss adjusters and contractors) in insurance claims for the repair of flood-damaged property, homeowner satisfaction with the performance of loss adjusting firms will be the best predictor of overall homeowner satisfaction.

This hypothesis was designed to examine how much of the variance in overall homeowner satisfaction with the process can be explained by the overall homeowners' satisfaction with the three service providers - insurance company, loss adjuster and the contractors. In other words, can overall homeowner satisfaction be predicted based on the satisfaction of a homeowner with the individual services provided by the insurance company, loss adjuster and the contractors, respectively? This is important for the damage management industry because it will highlight where most of the effort of service providers should go in order to ensure overall homeowner satisfaction.

Table 7.12 MRA Test for Hypothesis

MULTIPLE REGRESSION	
Two Variables required	
DV	One continuous dependent variable (Overall Satisfaction) • **OVERALL Satisfaction_ALL**
IV	One categorical independent variable • oSAT_Insurer • oSAT_Loss Adjuster • oSAT_Contractor
Nature of statistic	

The dependent variable (DV) in the hypothesis is "Overall Homeowner Satisfaction" which is represented by three variables - the two variables derived in section 7.6.2 (OSAT_Repair Works and OSAT_Process & Settlement) as well as the single composite satisfaction measure (OSAT_ALL) discussed in section 7.6.3. The independent variables used were homeowner satisfaction with the individual service provider services, i.e. the insurance company (oSAT_Insurer), the Loss Adjuster (oSAT_ Loss Adjuster) and the contractor (oSAT_Contractor).

The method used for testing this hypothesis was the "enter method" of multiple regression analysis. This method is generally recommended where independent variables can be justified by previous research or are theoretically proven to be important (Field, 2000). In this study, it was evident from the literature and from the initial exploratory interviews that the three major players in the insurance claim chain are the insurance company, loss adjusters and contractors (cleaning/drying and/or and repair company). Therefore use of the enter method of MRA was deemed to be the most suitable technique to investigate this hypothesis. In the enter method all the variables predetermined by the researcher are "forced" into the model simultaneously (hence the name "forced entry") to determine how well they predict the dependent variable, in this case homeowner satisfaction.

7.7.1 Hold Out Sample for H_4 model validation

The data set was divided into a 95%/5%, with the larger sample being used for developing the models and the five percent being excluded from the model data and kept as a *holdout sample*. The holdout sample, consisting of data from the same population from which the sample used for modelling was drawn, was then used for checking the accuracy of models generated. The use of a holdout sample was based on the data splitting approach recommended by Field (2000). Selection of cases (homeowners) to be kept in the holdout samples was done randomly using SPSS's function for 'selecting cases' by random selection.

Table 7.13 Descriptive Statistics for MRA (DV = OSAT_ALL)

Descriptive Statistics[a]

	Mean	Std. Deviation	N
OSAT_ALL	4.1774	1.37568	116
oSAT_Insurer	4.27	1.624	106
oSAT_Loss Adjuster	4.20	1.657	104
oSAT_Contractor	3.91	1.753	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Correlations[a]

		OSAT_ALL	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
Pearson Correlation	OSAT_ALL	1.000	.757	.772	.831
	oSAT_Insurer	.757	1.000	.845	.406
	oSAT_Loss Adjuster	.772	.845	1.000	.459
	oSAT_Contractor	.831	.406	.459	1.000
Sig. (1-tailed)	OSAT_ALL	.	.000	.000	.000
	oSAT_Insurer	.000	.	.000	.000
	oSAT_Loss Adjuster	.000	.000	.	.000
	oSAT_Contractor	.000	.000	.000	.
N	OSAT_ALL	116	106	104	112
	oSAT_Insurer	106	106	97	102
	oSAT_Loss Adjuster	104	97	104	100
	oSAT_Contractor	112	102	100	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Table 7.13 shows the mean scores and standard deviations of the DV and the IVs. Correlations among the predictor variables as well as with the dependent variable are also presented in Table 7.13, with all the variables being significantly correlated. Satisfaction with insurance services (oSAT_Insurer) was positively correlated with satisfaction with contractor services (oSAT_Contractor) (r = .406) and with satisfaction with loss adjuster services (oSAT_Loss Adjuster) (*r* = .845). Satisfaction with loss adjuster services (oSAT_Loss Adjuster) was positively correlated with contractor services (oSAT_Contractor) (*r* = .459).

7.7.2 Predicting Homeowner Satisfaction (DV = OSAT_ALL)

Using the enter method, a regression model was estimated for Overall homeowners' satisfaction with all the services (OSAT_ALL) during the claim for the repair of flood damaged domestic property. As presented in model summary in Table 7.14, a significant model emerged ($F_{3,93}$ = 331.423, p<0.0001). An R^2 value of .914 indicates that a high proportion of variance (91%) is explained by the model.

The Beta coefficient values in Table 7.14 show that, among the three service providers under consideration, satisfaction with the contractor's service (oSAT_Contractor) makes the single largest statistically significant contribution (Beta= .569) in predicting overall homeowner satisfaction in claims for the repair of flood damage domestic property. Among the three services, homeowner satisfaction with the contractor's service is the best predictor of overall homeowner satisfaction.

The coefficients table has useful information including the part correlations; if these values are squared, it provides an indication of the total contribution of that variable to the R^2, i.e. the individual variable contribution in explaining the dependent variable and how much the R^2 would drop if the variable was removed from the model (Pallant, 2005). This is done by squaring the part correlation coefficient values as follows:

- Satisfaction with the insurers (oSAT_Insurer): .175⇨ ($.175^2$) = 3%,
- Satisfaction with loss adjusters (oSAT_Loss Adjuster): .115⇨ ($.115^2$) = 1%,
- Satisfaction with contractors (oSAT_Loss Adjuster): .529⇨ ($.529^2$) = 28%,

Table 7.14 MRA Model Summary (DV = OSAT_ALL)

Model Summary[b,c]

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate
	"HoldOut Sample Excluded" = Yes (Selected)	"HoldOut Sample Excluded" ~= Yes (Unselected)			
1	.956[a]	.997	**.914**	.912	.40877

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

c. Dependent Variable: OSAT_ALL

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.139	3	55.380	331.423	.000[a]
	Residual	15.540	93	.167		
	Total	181.679	96			

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Dependent Variable: OSAT_ALL

c. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	**VIF**
1	(Constant)	.389	.129		3.006	.003	.132	.646					
	oSAT_Insurer	.278	.048	.328	5.776	.000	.182	.373	.757	.514	.175	.286	3.501
	oSAT_Loss Adjuster	.184	.048	.221	3.794	.000	.088	.280	.772	.366	.115	.270	3.705
	oSAT_Contractor	.468	.027	**.596**	17.452	.000	.415	.521	.831	.875	.529	.788	1.269

a. Dependent Variable: OSAT_ALL

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

In other words, the above assessment shows that satisfaction with the contractor's services makes a unique contribution to R^2 of 28%, nearly seven times the combined unique contribution of both satisfaction with the insurers (oSAT_Insurer) and satisfaction with the services of the loss adjuster (oSAT_Loss Adjuster). The rest of the variance is due to overlap or shared variance amongst all three independent variables which is evident in the inter-correlation of independent variables shown in the correlation matrix in Table 7.13.

More statistical information on this hypothesis can be found in SPSS outputs in Appendix O (from page 343).

7.7.3 Predicting Homeowner Satisfaction (DV = OSAT_Repair Works)

Using the enter method, a regression model was estimated for overall homeowner satisfaction (OSAT_Repair Works). As presented in model summary in Table 7.14, a significant model emerged ($F_{3,93}$ = 238.657, p<0.0001). An R^2 value of .885 indicates that a high proportion of variance (89%) is explained by the model.

The Beta coefficient values in Table 7.14 show that, among the three service providers under consideration, satisfaction with the contractor's service makes the single largest and the only statistically significant contribution in predicting overall homeowner satisfaction in claims for the repair of flood damage domestic property. Among the three services, homeowner satisfaction with the contractor's service is the best predictor of overall homeowner satisfaction with the repairs to flood-damaged domestic property.

Table 7.15 Descriptive Statistics for MRA (DV = OSAT_Repair Works)

Descriptive Statistics[a]

	Mean	Std. Deviation	N
OSat_Repair Works	4.0965	1.64004	114
oSAT_Insurer	4.27	1.624	106
oSAT_Loss Adjuster	4.20	1.657	104
oSAT_Contractor	3.91	1.753	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Correlations[a]

		OSat_Repair Works	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
Pearson Correlation	OSat_Repair Works	1.000	.448	.478	.938
	oSAT_Insurer	.448	1.000	.845	.406
	oSAT_Loss Adjuster	.478	.845	1.000	.459
	oSAT_Contractor	.938	.406	.459	1.000
Sig. (1-tailed)	OSat_Repair Works	.	.000	.000	.000
	oSAT_Insurer	.000	.	.000	.000
	oSAT_Loss Adjuster	.000	.000	.	.000
	oSAT_Contractor	.000	.000	.000	.
N	OSat_Repair Works	114	104	102	112
	oSAT_Insurer	104	106	97	102
	oSAT_Loss Adjuster	102	97	104	100
	oSAT_Contractor	112	102	100	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

An inspection of part correlations on the coefficients table, which was briefly discussed in section 7.5.4, shows that satisfaction with the contractor's services (oSAT_Contractor) makes the largest unique contribution to $R^2$of 65% on its own, i.e. omitting the variable from the model would see R^2 drop from 89% to a low 24%.

More statistical information on this hypothesis can be found in SPSS outputs in Appendix O (from page 348).

Table 7.16 MRA Model Summary (DV = OSAT_Repair Works)

Model Summary[b,c]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.941[a]	.998	**.885**	.881	.56497

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

c. Dependent Variable: OSat_Repair Works

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	228.529	3	76.176	238.657	.000[a]
	Residual	29.684	93	.319		
	Total	258.213	96			

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Dependent Variable: OSat_Repair Works

c. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.442	.179		2.474	.015	.087	.797					
	oSAT_Insurer	.098	.066	.097	1.476	.143	-.034	.230	.448	.151	.052	.286	3.501
	oSAT_Loss Adjuster	-.021	.067	-.021	-.309	.758	-.154	.112	.478	-.032	-.011	.270	3.705
	oSAT_Contractor	.849	.037	**.908**	**22.926**	**.000**	.776	.923	.938	.922	.806	.788	1.269

a. Dependent Variable: OSat_Repair Works

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

7.7.4 Predicting Homeowner Satisfaction (DV=OSAT_Process/Settlement)

Using the enter method, a regression model was estimated for overall homeowner satisfaction (OSAT_Process & Settlement). As shown in the model summary in Table 7.14, a significant model emerged ($F_{3,93}$ = 378.708, p<0.0001). An R^2 value of .924 indicates that a high proportion of variance (92%) is explained by the model.

Table 7.17 Descriptive Statistics for MRA (DV = OSAT_Process & Settlement)

Descriptive Statistics[a]

	Mean	Std. Deviation	N
OSat_Process & Settlement	4.2687	1.45072	116
oSAT_Insurer	4.27	1.624	106
oSAT_Loss Adjuster	4.20	1.657	104
oSAT_Contractor	3.91	1.753	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Correlations[a]

		OSat_ Process & Settlement	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
Pearson Correlation	OSat_Process & Settlement	1.000	.916	.922	.516
	oSAT_Insurer	.916	1.000	.845	.406
	oSAT_Loss Adjuster	.922	.845	1.000	.459
	oSAT_Contractor	.516	.406	.459	1.000
Sig. (1-tailed)	OSat_Process & Settlement	.	.000	.000	.000
	oSAT_Insurer	.000	.	.000	.000
	oSAT_Loss Adjuster	.000	.000	.	.000
	oSAT_Contractor	.000	.000	.000	.
N	OSat_Process & Settlement	116	106	104	112
	oSAT_Insurer	106	106	97	102
	oSAT_Loss Adjuster	104	97	104	100
	oSAT_Contractor	112	102	100	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The Beta coefficient values in Table 7.18 show that, among the three service providers under consideration, satisfaction with the contractor's service makes the single largest statistically significant contribution in predicting overall homeowner satisfaction in claims for the repair of flood damage domestic property. Among the three services, homeowner satisfaction with the insurance company services (oSAT_Insurer) and homeowner satisfaction with the loss adjusters services (oSAT_Loss Adjuster) both (nearly equally) best predict overall homeowner satisfaction with the process and the financial settlement of the claim.

Further inspection of part correlations on the coefficients table, which was briefly discussed in section 7.5.4, shows that satisfaction with the insurance company services (oSAT_Insurer) and homeowner satisfaction with the loss adjusters services (oSAT_Loss Adjuster) make a unique contribution to $R^2$of 6% each when both are included in the model, i.e. omitting one of the two variables (for instance "oSAT_Loss Adjuster") from the model would see R^2 drop by 6% to 86%. However, that would instantly suggest that much of the variance in the dependent variable would be accounted for by the remaining variable of the two, in this example, oSAT_Insurer, which would then account for as much as 60% unique contribution to R^2. This clearly illustrates the fact that much of the variance is due to overlap (shared variance) amongst all three independent variables, but especially between the two key predictors of overall satisfaction with the process and the financial settlement of the claim. (oSAT_Insurer and oSAT_Loss Adjuster).

More statistical information on this hypothesis can be found in SPSS outputs in Appendix O (from page 354).

Table 7.18 MRA Model Summary (DV = OSAT_Process & Settlement)

Model Summary[b,c]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.961[a]	.996	**.924**	.922	.40544

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

c. Dependent Variable: OSat_Process & Settlement

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	186.754	3	62.251	378.708	.000[a]
	Residual	15.287	93	.164		
	Total	202.042	96			

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Dependent Variable: OSat_Process & Settlement

c. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.378	.128		2.949	.004	.124	.633					
	oSAT_Insurer	.420	.048	**.470**	8.814	.000	.325	.515	.916	.675	.251	.286	3.501
	oSAT_Loss Adjuster	.417	.048	**.476**	8.666	.000	.321	.512	.922	.668	.247	.270	3.705
	oSAT_Contractor	.088	.027	.106	3.312	.001	.035	.141	.516	.325	.094	.788	1.269

a. Dependent Variable: OSat_Process & Settlement

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

7.7.5 Validation of Model in Hypothesis 4 (H4)

As discussed in Section 7.2.4 of this chapter (from page 180), cross-validation of models generated using multiple regression analysis is the process of assessing how accurately the model derived from a sample using MRA accurately represents the entire population. Both methods proposed by Field (2000) were considered for cross validation of the models, namely using the adjusted R^2 and data splitting.

Therefore, the aim of this section was to apply the models derived in Sections 7.7.2, 0 and 7.7.4 to a different sample, a hold out sample of 5 percent of the original sample collected in this survey. Model accuracy and potential for generalisation is determined by the extent to which it is capable of predicting the same outcome variable from the same set of predictors but in a different set of people (Field, 2000). If the model's predictive power diminishes severely when tested during validation, the model does not generalise to the population from which the sample was drawn.

The reader is however referred to the discussion in Section 7.2.4 where the author stressed that **prediction using MRA does not guarantee every case in the population would conform to the derived model. However, if an unbiased model has been derived using MRA, it can be generalised to the population in terms of <u>the average predictions</u> being likely to be similar**. Hence the concern during validation was not the variance between the satisfaction scores predicted by the model for individual cases but rather the variance between the average satisfaction scores for the sample used in deriving the model and the average satisfaction scores predicted for the entire hold out sample.

The results for prediction accuracy of the models derived in Sections 7.7.2, 0 and 7.7.4 are presented in Table 7.22. HOS1 – HOS7 are the cases retained in the hold out sample. The raw data shows the satisfaction scores for holdout sample, for both independent variables (oSAT_Insurer, oSAT_Loss Adjuster, oSAT_Contractor) and dependent variables (OSAT_Repair Works, OSAT_Process & Settlement, OSAT_ALL). Below each column of these variables is the mean satisfaction scores of the variables for the data set used in deriving the models presented in Sections 7.7.2, 0 and 7.7.4 (i.e. non-hold out sample). These are essential as they are the basis for comparison with the mean satisfaction scores predicted by the model formula when applied to the hold out sample.

The model prediction data shown in Table 7.22 are the satisfaction scores predicted by the model when applied to the hold out sample. The variance is the difference between the actual mean satisfaction scores for the individual cases as provided by the respondent (homeowner) and the model prediction score.

7.7.5.1 Validation of the "OSAT_Repair works" Model

The MRA equation for satisfaction with the repairs, derived from the constant and unstandardised coefficients (Table 7.19), is shown below.

$$Y^1 = 0.442 + (0.098X_1) + (-0.021X_2) + (0.849X_3)$$

Where X_1, X_2 and X_3 are the IV values (*for* oSAT_Insurer, oSAT_Loss Adjuster, oSAT_Contractor, respectively)

Table 7.19 Coefficients Table (DV = "OSAT_Repair works")

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	**.442**	.179		2.474	.015
	oSAT_Insurer	**.098**	.066	.097	1.476	.143
	oSAT_Loss Adjuster	**-.021**	.067	-.021	-.309	.758
	oSAT_Contractor	**.849**	.037	.908	22.926	.000

a. Dependent Variable: OSat_Repair Works

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The predicted mean score for "OSAT_Repair works" for the hold out sample is 3.92 whereas the actual mean scores from the sample used to develop the model was 4.10, representing an average prediction error of -4%. This is a good result meaning that the model is validated as 96% accurate in predicting the average satisfaction scores of a different sample (in this case the hold out sample) drawn from the same population.

7.7.5.2 Validation of the "OSAT_Process & Settlement" Model

The MRA equation for satisfaction with the repairs, derived from the constant and unstandardised coefficients (Table 7.22), is shown below.

$$Y' = 0.378 + (0.420 X_1) + (0.417 X_2) + (0.088 X_3)$$

Where X_1, X_2 and X_3 are the IV values (*for* oSAT_Insurer, oSAT_Loss Adjuster, oSAT_Contractor, respectively)

Table 7.20 Coefficients Table (DV = "OSAT_Process & Settlement")

Coefficients[a,b]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	**.378**	.128		2.949	.004
	oSAT_Insurer	**.420**	.048	.470	8.814	.000
	oSAT_Loss Adjuster	**.417**	.048	.476	8.666	.000
	oSAT_Contractor	**.088**	.027	.106	3.312	.001

a. Dependent Variable: OSat_Process & Settlement

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The predicted mean score for "OSAT_Process & Settlement" for the hold out sample is 4.18 whereas the actual mean scores from the sample used to develop the model was 4.27, representing an average prediction error of -2%. This is a good result meaning that the model is validated as 98% accurate in predicting the average satisfaction scores of a different sample (in this case the hold out sample) drawn from the same population.

7.7.5.3 Validation of the "OSAT_ALL" Model

The MRA equation for satisfaction with the repairs, derived from the constant and unstandardised coefficients (Table 7.21), is shown below.

$$Y' = 0.389 + (0.278 X_1) + (0.184 X_2) + (0.468 X_3)$$

Where X_1, X_2 and X_3 are the IV values (*for* oSAT_Insurer, oSAT_Loss Adjuster, oSAT_Contractor, respectively)

Table 7.21 Coefficients Table (DV = "OSAT_ALL")

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	**.389**	.129		3.006	.003
	oSAT_Insurer	**.278**	.048	.328	5.776	.000
	oSAT_Loss Adjuster	**.184**	.048	.221	3.794	.000
	oSAT_Contractor	**.468**	.027	.596	17.452	.000

a. Dependent Variable: OSAT_ALL

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

The predicted mean score for "OSAT_ALL" for the hold out sample is 4.05 whereas the actual mean scores from the sample used to develop the model was 4.18, representing an average prediction error of -3%. This is a good result meaning that the model is validated as 97% accurate in predicting the average satisfaction scores of a different sample (in this case the hold out sample) drawn from the same population.

Table 7.22 Model Validation - Prediction of OSAT on holdout sample

		Independent Variables			Independent Variables			OSAT_Repair works			OSAT_Process & Settlement			OSAT_ALL		
		X_1	X_2	X_3												
	Hold Out Sample Case	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_Contractor	**OSATRepair works**	**OSAT_Process & Settlement**	**OSAT_ALL**	**Model Prediction**	**Variance (Predicted -v- Actual)**	**% of VAR**	**Model Prediction**	**Variance (Predicted -v- Actual)**	**% of VAR**	**Model Prediction**	**Variance (Predicted -v- Actual)**	**% of VAR**
Hold Out Sample Cases & their Scores	HOS_1	0	0	1	**2**	**1**	**1**	**1.29**	**- 0.21**	**-21%**	**0.47**	**- 0.53**	**-53%**	**0.86**	**0.11**	**14%**
	HOS_2	4	4	2	**3**	**4**	**3**	**2.45**	**- 0.05**	**-1%**	**3.90**	**- 0.10**	**-2%**	**3.17**	**- 0.08**	**-2%**
	HOS_3	4	3	4	**4**	**4**	**4**	**4.09**	**- 0.01**	**0%**	**3.65**	**0.15**	**4%**	**3.88**	**0.38**	**11%**
	HOS_4	6	6	6	**6**	**6**	**6**	**6.00**	**- 0.00**	**0%**	**5.93**	**- 0.07**	**-1%**	**5.97**	**- 0.03**	**-1%**
	HOS_5	5	4	3	**4**	**4**	**4**	**3.39**	**- 0.11**	**-3%**	**4.49**	**0.16**	**4%**	**3.96**	**0.04**	**1%**
	HOS_6	5	5	4	**4**	**5**	**4**	**4.22**	**0.22**	**5%**	**4.92**	**0.42**	**9%**	**4.57**	**0.32**	**8%**
	HOS_7	6	6	6	**6**	**6**	**6**	**6.00**	**- 0.00**	**0%**	**5.93**	**- 0.07**	**-1%**	**5.97**	**- 0.03**	**-1%**
Regression Sample Means		4.27	4.2	3.91	**4.1**	**4.27**	**4.18**	**3.92**	**- 0.18**	**-4%**	**4.18**	**- 0.09**	**-2%**	**4.05**	**- 0.13**	**-3%**

7.7.6 Level of Satisfaction with each service provider

In addition to examining hypothesis four, the level of satisfaction with each service provider was also examined. As shown in Table 7.23, this was done by assessing the relative importance of the responses. The values on the measurement scale used to evaluate homeowner satisfaction were zero to six (0-6), with zero denoting very dissatisfied and six denoting very satisfied. Using the insurance service calculations as an example, the first step was to compute the highest possible score (678) by multiplying the total number of respondents (113) with the highest value on the scale (six). Then, the frequencies on each response were multiplied with the respective values on the adjusted scale and added to compute the total scored by the respondents (483). This total scored (483) was then expressed as a proportion of the maximum possible score (678) using the "satisfaction index" approach as outlined in Hill, *et al*. (2003: 92).

The same procedure was followed to compute the satisfaction levels for the loss adjusters and contractors. It is evident from Table 7.23 that the lowest satisfaction level with an individual service provider was with contractors' performance (65%) while the highest level of satisfaction was with insurance companies' services (71%).

No attempt was made here to determine how significant these differences in satisfaction levels are. This is not deemed necessary because the statistical significance of the three measures of satisfaction for each individual service provider, i.e. oSAT_Insurer, oSAT_Loss Adjusters and oSAT_Contractors (refer to Table 6.8 for details), with respect to homeowner satisfaction, was examined in the regression models developed in section 7.7.

Table 7.23 Satisfaction Levels for each service provision

LEVEL OF SATISFACTION WITH EACH SERVICE PROVIDER									
VARIABLES									
Insurance Services	Scale (V)	0	1	2	3	4	5	6	
	Frequency (L)	5	6	3	15	24	30	30	**113**
	V x L	**0**	**6**	**6**	**45**	**96**	**150**	**180**	**483**
	Maximum Possible Score (6*113)					**678**			
		Mean Satisfaction:				**4.27**	**Satisfaction Level:**		**71%**
Loss Adjusters Services	Scale (V)	0	1	2	3	4	5	6	
	Frequency (L)	5	5	6	18	20	26	30	**110**
	V x L	**0**	**5**	**12**	**54**	**80**	**130**	**180**	**461**
	Maximum Possible Score (6*110)					**660**			
		Mean Satisfaction:				**4.20**	**Satisfaction Level:**		**70%**
Contractors Services	Scale (V)	0	1	2	3	4	5	6	
	Frequency (L)	7	6	12	19	24	23	27	**118**
	V x L	**0**	**6**	**24**	**57**	**96**	**115**	**162**	**460**
	Maximum Possible Score (6*118)					**708**			
		Mean Satisfaction:				**3.91**	**Satisfaction Level:**		**65%**
		Overall Mean Satisfaction:							**4.13**
		Overall Level of Satisfaction:							**69%**

7.8 HYPOTHESIS 5 (H_5)

H_5: There is a significant difference in mean scores of homeowner satisfaction of flood damage repairs for claims which took less than 6months, 6-11months and 12months and above to settle.

This hypothesis examines the relationship between two variables, namely: **homeowner satisfaction** during a flood claim and the **time taken** from the flood event to completion of the repair works and settling of the insurance claim.

This hypothesis was tested using one-way between groups Analysis of Variance (ANOVA) which compares the variability in scores between the different groups (believed to be due to the independent variable) with the variability within each of the groups (believed to be due to chance).

Table 7.24 Summary of Technique used to test hypothesis 5

One-way between groups Analysis of Variance (ANOVA)	
Two Variables required	
IV	One categorical independent variable with three or more distinct categories/levels • Time Taken (3 categories) i. <6months, ii. 6-11months, and iii. 12months and above
DV	One continuous dependent variable • SATISFACTION • Satisfaction with each individual service provider was used as a dependent variable, in addition to overall satisfaction with the process, repairs and financial settlement.

7.8.1 One-way between groups Analysis of Variance (ANOVA)

One-way analysis of variance (ANOVA) technique is normally employed when comparing the mean scores, on a continuous dependent variable, of three or more distinct categories of people or conditions (Pallant, 2005). ANOVA, which is sometimes called an F test, is closely related to the t test. While the t test measures the difference between the means of two categories, ANOVA tests the difference between the means of two or more groups. It involves an independent categorical variable with at least three different levels (such as age groups: 1=18-29, 2=30-44, 3=45+) and a dependent continuous variable.

Among other things, one important assumption to be checked when using ANOVA is that of homogeneity of variances. This is a test of whether the variance in the scores of the dependent variable is the same for each of the three or more categories involved in the test. A sig. value greater than .05 on the Levene's test indicates that the data does not violate the assumption of homogeneity of variances. If a sig. value less than or equal to .05 is obtained in the Levene's test, then the data violates the assumption of homogeneity of variances and it may be necessary to turn to the Welch and/or Brown-Forsythe tests which are deemed to be more robust tests.

To determine whether or not there is a statistically significant difference in the three or more groups being examined, the sig. value in the ANOVA test must be significant at the chosen cut-off of .05.

When a statistically significant difference in the ANOVA test is detected, it is useful to examine the multiple comparisons to determine exactly where the differences occur among the groups using the post-hoc tests.

Effect size, which is a measure of the strength of association, was calculated using eta squared, with .01, .06, and .14 being deemed to be small, moderate and large effects respectively. Eta squared was calculated using the following formula:

$$EtaSquared = \frac{Sum \cdot of \cdot Squares \cdot between - groups}{Total \cdot Sum \cdot of \cdot Sqaures}$$

A one-way between groups analysis of variance was conducted to investigate the impact of time it took to complete flood damage repair works on homeowner satisfaction. Respondents were divided into three groups according to the time taken to complete the repairs and settle the insurance claims (Group 1: < 6months; Group 2: 6-11months; Group 3: 12months & Above). The satisfaction measures used as DVs are the three overall measures as derived in section 7.6 (from page 202), namely OSAT_Repair Works (overall homeowner satisfaction with the repairs), OSAT_Process and Settlement (overall homeowner satisfaction with the claim process and financial settlement), and OSAT_ALL (overall homeowner satisfaction with the services received during the claim).

Table 7.25 ANOVA [OSAT -v- Time Taken] – Descriptives and Tests of Homogeneity

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
OSat_Repair Works	< 6months	57	4.4737	1.31074	.17361	4.1259	4.8215	.00	6.00
	6-11months	44	3.9091	1.77277	.26725	3.3701	4.4481	.00	6.00
	12months & Above	16	3.2500	2.12916	.53229	2.1154	4.3846	.00	6.00
	Total	117	4.0940	1.66212	.15366	3.7897	4.3984	.00	6.00
OSat_Process & Settlement	< 6months	59	4.6808	1.11719	.14545	4.3896	4.9719	1.00	6.00
	6-11months	45	4.0963	1.43603	.21407	3.6649	4.5277	.50	6.00
	12months & Above	16	3.2656	2.22011	.55503	2.0826	4.4486	.00	6.00
	Total	120	4.2729	1.49091	.13610	4.0034	4.5424	.00	6.00
OSAT_ALL	< 6months	59	4.5692	1.04209	.13567	4.2976	4.8408	2.00	6.00
	6-11months	45	3.9870	1.38964	.20716	3.5695	4.4045	.50	6.00
	12months & Above	16	3.2578	2.07187	.51797	2.1538	4.3618	.00	6.00
	Total	120	4.1760	1.40993	.12871	3.9212	4.4309	.00	6.00

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
OSat_Repair Works	7.707	2	114	.001
OSat_Process & Settlement	11.655	2	117	.000
OSAT_ALL	11.444	2	117	.000

Table 7.26 ANOVA [OSAT -v- Time Taken] – ANOVA Table and Robust Tests

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
OSat_Repair Works	Between Groups	21.119	2	10.559	4.021	.021
	Within Groups	299.347	114	2.626		
	Total	320.466	116			
OSat_Process & Settlement	Between Groups	27.453	2	13.727	6.775	.002
	Within Groups	237.060	117	2.026		
	Total	264.513	119			
OSAT_ALL	Between Groups	24.218	2	12.109	6.672	.002
	Within Groups	212.343	117	1.815		
	Total	236.561	119			

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
OSat_Repair Works	Welch	3.340	2	37.022	.046
	Brown-Forsythe	3.126	2	40.590	.055
OSat_Process & Settlement	Welch	4.809	2	36.050	.014
	Brown-Forsythe	4.431	2	30.430	.020
OSAT_ALL	Welch	4.969	2	35.951	.012
	Brown-Forsythe	4.420	2	31.238	.020

a. Asymptotically F distributed.

Table 7.27 ANOVA [OSAT -v- Time Taken] – Multiple Comparisons

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) TIME TAKEN TO REPAIR	(J) TIME TAKEN TO REPAIR	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
OSat_Repair Works	< 6months	6-11months	.56459	.32519	.196	-.2076	1.3368
		12months & Above	1.22368*	.45846	.024	.1350	2.3124
	6-11months	< 6months	-.56459	.32519	.196	-1.3368	.2076
		12months & Above	.65909	.47307	.348	-.4643	1.7825
	12months & Above	< 6months	-1.22368*	.45846	.024	-2.3124	-.1350
		6-11months	-.65909	.47307	.348	-1.7825	.4643
OSat_Process & Settlement	< 6months	6-11months	.58449	.28172	.100	-.0843	1.2533
		12months & Above	1.41517*	.40122	.002	.4627	2.3676
	6-11months	< 6months	-.58449	.28172	.100	-1.2533	.0843
		12months & Above	.83067	.41432	.116	-.1529	1.8142
	12months & Above	< 6months	-1.41517*	.40122	.002	-2.3676	-.4627
		6-11months	-.83067	.41432	.116	-1.8142	.1529
OSAT_ALL	< 6months	6-11months	.58217	.26663	.078	-.0508	1.2151
		12months & Above	1.31140*	.37973	.002	.4100	2.2128
	6-11months	< 6months	-.58217	.26663	.078	-1.2151	.0508
		12months & Above	.72922	.39212	.155	-.2016	1.6601
	12months & Above	< 6months	-1.31140*	.37973	.002	-2.2128	-.4100
		6-11months	-.72922	.39212	.155	-1.6601	.2016

*. The mean difference is significant at the .05 level.

7.8.2 Time taken –v- OSAT_Repair Works

The results of one-way between groups analysis of variance evaluating the difference in means for overall homeowner satisfaction with the repairs for the three categories of homeowners (by time taken to reinstate their property) are presented here. The significance value (sig) for the Levene's test for all dependent variables being examined is less than .05, which indicates a violation of the assumption of homogeneity of variance. In such circumstances, Pallant (2005) advises that it is preferable to refer to the Welch and Brown-Forsythe tests which are more robust tests of variance (refer to Table 7.26). The results of the analysis of variance (refer to Welch values in Table 7.26) show that **there was a statistically significant difference** in the mean scores of overall homeowner satisfaction with the repairs (OSAT_Repair Works) at $p<.05$, for all homeowners in the three categories of the length of time taken by service providers to reinstate their flood damaged domestic property [$F(2,37)=3.34$, $p=.046$]. The actual difference in means between the groups was medium. The effect size calculated using eta squared, was .07. The ANOVA table only tells researchers whether or not there are statistical differences in the means of variables. Further analysis is required to determine where the differences actually lie within the comparisons. Using the Turkey HSD technique which enables researchers to pinpoint where the differences occur, a multiple comparison table was generated (refer to Table 7.27). These Post-hoc comparisons show that the mean score for Group 1 (homeowners whose properties were reinstated in less than 6months) [$M=4.47$, $SD=1.31$] was significantly different from Group 3 (homeowners whose properties were reinstated in 12months and above) [$M=3.25$, $SD=2.13$]. Group 2 (homeowners whose properties were reinstated in 6-11months) [$M=3.91$, $SD=1.77$] did not significantly differ from either Group 1 or 3.

Further details of the analysis output can be found in Appendix P from page 360.

7.8.3 Time taken –v- OSAT_Process & Settlement

The results of one-way between groups analysis of variance evaluating the difference in means for overall homeowner satisfaction with the claim process and financial settlement for the three categories of homeowners (by time taken to reinstate their property) are presented here. The significance value (sig) for the Levene's test for all dependent variables being examined is less than .05, which indicates a violation of the assumption of homogeneity of variance. In such circumstances, Pallant (2005) advises that it is preferable to refer to the Welch and Brown-Forsythe tests which are more robust tests of variance (refer to Table 7.25). The results of the analysis of variance (refer to Welch values in Table 7.25) show that **there was a statistically significant difference** in the mean scores of overall homeowner satisfaction with the claim process and financial settlement (OSAT_Process & Settlement) at $p<.05$, for all homeowners in the three categories of the length of time taken by service providers to reinstate their flood damaged domestic property [$F(2,36)=4.81$, $p=.014$]. The actual difference in means between the groups was medium. The effect size calculated using eta squared, was .10. The ANOVA table only tells researchers whether or not there are statistical differences in the means of variables. Further analysis is required to determine where the differences actually lie within the comparisons. Using the Turkey HSD technique which enables researchers to pinpoint where the differences occur, a multiple comparison table was generated (refer to Table 7.27) These Post-hoc comparisons show that the mean score for Group 1 (homeowners whose properties were reinstated in less than 6months) [$M=4.68$, $SD=1.12$] was significantly different from Group 3 (homeowners whose properties were reinstated in 12months and above) [$M=3.27$, $SD=2.22$]. Group 2 (homeowners whose properties were reinstated in 6-11months) [$M=4.10$, $SD=1.44$] did not significantly differ from either Group 1 or 3.

Further details of the analysis output can be found in Appendix P from page 360.

7.8.4 Time taken –v- OSAT_ALL

The results of one-way between groups analysis of variance evaluating the difference in means for overall homeowner satisfaction with all the services received during the claim for the three categories of homeowners (by time taken to reinstate their property) are presented here. The significance value (sig) for the Levene's test for all dependent variables being examined is less than .05, which indicates a violation of the assumption of homogeneity of variance. In such circumstances, Pallant (2005) advises that it is preferable to refer to the Welch and Brown-Forsythe tests which are more robust tests of variance (refer to Table 7.25). The results of the analysis of variance (refer to Welch values in Table 7.25) show that **there was a statistically significant difference** in the mean scores of overall homeowner satisfaction with the entire claim (OSAT_ALL) at $p<.05$, for all homeowners in the three categories of the length of time taken by service providers to reinstate their flood damaged domestic property [$F(2,36)=4.97$, $p=.012$]. The actual difference in means between the groups was medium. The effect size calculated using eta squared, was .10. The ANOVA table only tells researchers whether or not there are statistical differences in the means of variables. Further analysis is required to determine where the differences actually lie within the comparisons. Using the Turkey HSD technique which enables researchers to pinpoint where the differences occur, a multiple comparison table was generated (refer to Table 7.27). These Post-hoc comparisons show that the mean score for Group 1 (homeowners whose properties were reinstated in less than 6months) [$M=4.57$, $SD=1.04$] was significantly different from Group 3 (homeowners whose properties were reinstated in 12months and above) [$M=3.26$, $SD=2.07$]. Group 2 (homeowners whose properties were reinstated in 6-11months) [$M=3.99$, $SD=1.39$] did not significantly differ from either Group 1 or 3.

Further details of the analysis output can be found in Appendix P from page 360.

7.9 SUMMARY

In summary, the data do not support the hypothesis that service quality is a five-dimensional construct, across all three services (insurance, loss adjuster, contractor) received by homeowners during flood damage repair works. However, of the three key service providers, the contractor's performance was the most critical determinant of homeowners' overall satisfaction with flood damage reinstatement claims. In addition, satisfaction levels were significantly different for homeowners whose properties were completed within six months compared to those whose repair process exceeded twelve months. The implications as well as limitations of these results are all presented in the conclusions chapter of this thesis.

8.1 INTRODUCTION

This chapter presents a detailed discussion of the findings described in the data analysis chapters (refer to Chapter 6 and Chapter 7). The discussion provides a link between the data analysis chapters (findings) and the literature, with a view to answer three basic questions: what, what now and so what. The chapter will reflect on the findings (what), what the findings mean (what now), and what their usefulness and/or implications are (so what). An attempt is made to explore how the findings fit into the existing body of knowledge and how they fair with current theories, where applicable. The usefulness and relevance of the findings are also considered in this chapter. A critical discussion of the findings obtained from the initial exploratory (semi-structured) interviews was undertaken in Chapter 5 of this thesis. As a result, only the discussion of the findings from the 'quantitative' data is presented in this chapter.

8.2 DISCUSSION OF RESEARCH HYPOTHESES FINDINGS

In order to enhance structure in the flow of ideas in the thesis, this section is presented in accordance with the pattern used to present the findings (refer to section 7.4 up to section 7.7.6 in Chapter 7). A discussion of the results of each hypothesis is presented below.

8.2.1 Discussion of the results of Hypothesis 1 (H_1)

H_1: The items that make up each of the three scales used to evaluate service quality of the three key services received by homeowners during flood-damage insurance claims can be reduced to a small set of underlying factors.

Hypothesis 1 concerned whether or not the multiple measures used in the three scales for measuring service quality for insurers, loss adjusters and contactors could be explained by a few underlying factors. Exploratory principal component factor analysis was used for this purpose (refer to section 7.4 in Chapter 7).

The findings show that there is insufficient evidence confirming the existence of reliable and interpretable factors of service quality in the data set used for this study. Instead, analysis of the three service quality scales only yielded one factor (in case of loss adjusters and contractors scales) or two factors (for insurers scale).

An attempt to extract two factors **insurers' service quality scale** is presented in Appendix L, on page 311. Only one variable, namely "staff appearance" loads strongly on the second factor. It can be argued that the question requiring homeowners to evaluate their perception of "staff appearance" (as well as "vehicle appearance") with reference to the performance of insurance companies may not be appropriate. It is uncommon for homeowners to have a face-face encounter with a representative from their insurance company, following a flood incident to the property. Usually, the interaction between insured flood victims with their insurance company is through telephone conversations. This may also help to explain why the analysis using principal components analysis highlighted these two variables as the only ones having any loadings whatsoever on the second factor. Only these two variables appear to be measuring something different from the rest of the variables. Therefore, when the two variables are excluded, arguably due to their inappropriateness to the insurer service quality scale, the data supports the existence of just one reliable factor.

Similarly, the analysis of the **loss adjusters' service quality scale** also yielded one factor, suggesting that all the variables in the scale were or at least were perceived to be measuring the same underlying construct.

The table showing "total variance explained" (refer to Appendix L on page 317) suggests that two factors may be extractable with a cumulative percentage of 84.91%. An attempt to extract two factors **contractors' service quality scale** is therefore presented in Appendix L on page 320. This has resulted in multiple loadings on both factors by all variables in the scale. This does not yield interpretable and reliable factors and hence confirms the existence of only one reliable factor. All variables therefore seem to be measuring the same underlying construct. Therefore, the data supports the existence of one reliable factor in the contractors' service quality scale.

The incidence of one factor in all three service quality scales (insurer, loss adjuster and contractor scales) is difficult to explain. It could have been influenced by one or more factors, such as:

- The specificity of the flood damage insurance claims which are unique and probably different from other industries where SERVQUAL has been applied before;
- The degree to which individual variables correlate with each other, suggesting that homeowners' perceived the multiple variable scales to be really measuring the same underlying construct;
- The limited size of the sample which could result in more robust analysis, if larger.

In an ideal world, one would prefer a result with a single significant loading for each variable on only one of the obtaining factors. However, Pallant (2005) admits that a "clean result", where each variable load on only one component yielding easily interpretable factors, is not always the case with factor analyses. It is therefore not uncommon, for factor analysis to result in multiple significant loadings for each variable. For the purpose of this study, it should be noted that this was not a stand-alone hypothesis but rather it was a means to an end. The ultimate aim was to use the findings (i.e. the identified factors) for further investigation in the development of models to predict homeowner satisfaction.

8.2.2 Discussion of the results of Hypothesis 2 (H_2)

H_2: The same (or similar) service quality variables will predict homeowner satisfaction with each of the three service providers (Insurers, Loss Adjusters and contractors).

Hypothesis 2 concerned whether or not homeowners place the same importance on the determinants of satisfaction when evaluating the performance of the three service providers (insurers, loss adjusters, and contractors). Stepwise multiple regression analysis was used for this purpose (refer to section 7.5 in Chapter 7). While hypothesis 1 was concerned with reducing the multiple variables in the three individual scales used in the study into some meaningful and manageable set of key themes and/or factors, hypothesis 2 was concerned with identifying a few key variables which significantly predict homeowner satisfaction with each of the three service providers.

As far as insurance companies are concerned, insurer trustworthiness and insurers staying involved in the claim process were the best predictors of homeowner satisfaction with insurance companies' services during flood damage claims. It appears that insurance companies cannot afford to distance themselves from the claims process, leaving loss adjusters to be the face of the insurer in the claim. Insurers would do well to be involved and be seen to be **staying involved** throughout the claim process. This may include regular telephone communication, from time to time, to make sure the policy holder concerns are being addressed and that they are having a satisfactory service experience.

As far as Loss adjusters are concerned, providing homeowners with personal attention and having a caring and understanding attitude; promptness of services as per service promises; and maintaining accurate records of the claim/repair works were the critical issues.

In times of wide-spread flooding, such as the Easter 2000 floods in the UK, service providers can be over-stretched. Loss adjusters in particular have been criticised for spending too little time on each claim they are handling. This leads to homeowners feeling they are just another 'case' being handled by the loss adjuster. Such a perception will breed homeowner dissatisfaction. In order to enhance homeowner satisfaction with the loss adjuster's services, homeowners need to feel that their claim is accorded personal attention by a caring and understanding loss adjuster while ensuring that the services are provided promptly as promised. In the first instance, it is important to ensure that homeowner expectations are carefully managed. This includes setting realistic expectations regarding important aspects such as timescales and then to deliver on those promises. The loss adjuster is also expected by homeowners to maintain accurate records of the claim/repair works, any discussions and agreed repairs.

As for the services provided by contractors (repairers), feeling safe to deal with the contractor's employees, the contractor doing their work in a timely manner, the contractor always keeping the property as tidy as possible, the size of the contractor's organisation to be appropriate for the scale of work, the contractor's employees to have the knowledge and competence to solve problems, and the contractor's organisation to have the homeowner's best interests at heart.

One would expect the best predictors of satisfaction with contractors' performance to at least include tangible aspects such as "good quality of completed repair works." However, it is the more "service" aspects of contractors' offerings rather than the 'product' aspects that seem to stand out as illustrated in Figure 8.1. Apart from one "keeping the property as tidy as possible' which may be classified as a "tangible[1]" aspect of the service, the rest of the satisfaction determinants relate to "assurance" (*i.e. employees' knowledge, courtesy and their ability to inspire trust and confidence*), "reliability" (*i.e. ability to perform the promised service dependably and accurately*) and "empathy" (*i.e. caring, individualised attention provided by the firm*).

It seems that contractors engaged on projects for the repair of flood damaged property cannot afford to have a mindset that views the domestic property being repaired merely as a 'building site.' Instead they need to be conscious of the fact that they are working on a flood victim's treasured home and hence their service level should not exacerbate the impact of the flood event. In a good number of cases, homeowners continue to live in the property while it is being repaired or leave some of their treasured contents and personal belongings in the property. Homeowners tend to place a degree of worth on their property and its contents; as such, they expect the representatives of service providers, in particular contractors' workmen, to treat the property with respect (e.g. keeping it as tidy as possible). In addition, homeowners can be anxious about handing over the keys to repairers, partly due to the contents and personal belongings that may still be in the property. Therefore, trusting relations must be engendered between the contractors and the homeowner to minimise any potential anxiety during the repair process.

Even though the individual items influencing satisfaction with each of the three key service providers are different, they have some similarities in terms of underlying

[1] Tangibles refer to service aspects such as physical facilities, equipment, and appearance of personnel

themes. Figure 8.1 shows that "assurance" aspects of the services were important in determining homeowner satisfaction with both contractors and insurers' services, while "empathy" dimensions were important in both contractors and loss adjusters' services. "Responsiveness[2]" aspects of the service were unique determinants of homeowner satisfaction with insurance companies, while "tangibles" were unique determinants of homeowner satisfaction with contractors. As shown in Figure 8.1, there was no category of variables that uniquely determined homeowner satisfaction with loss adjusters firms.

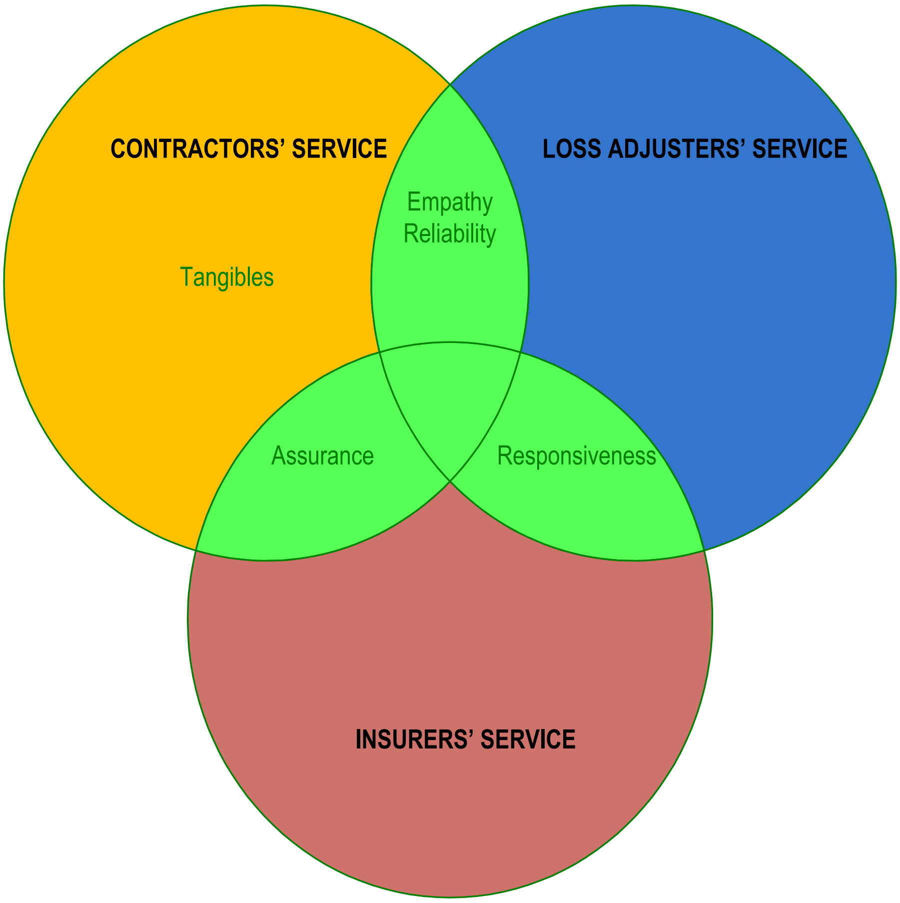

Figure 8.1 Comparison of satisfaction determinants

[2] Responsiveness refers to service aspects such as willingness to help customers and provide prompt service

8.2.3 Discussion of the results of Hypothesis 3 (H_3)

H_3: Overall homeowner satisfaction with the services received during insurance claims for the repair of flood-damaged property can be measured by multiple satisfaction variables, evaluating the process, financial aspects and the completed repair works.

Hypothesis 3 concerned whether or not the three variables used to measure aspects of overall homeowners satisfaction were actually unique or simply measuring the same underlying construct (refer to section 7.6 in Chapter 7). The results of the principal component analysis show that two of the variables actually measure the same underlying construct (overall satisfaction with the claim process AND overall satisfaction with the financial aspects) while the third was unique (overall satisfaction with the repair works). This resulted in the three multiple satisfactions measures being reduced to two satisfaction dependent variables, namely overall satisfaction with the process and financial settlement (a composite variable) and overall satisfaction with the repair works.

The above results seem to suggest a distinction between the services provided by insurance and loss adjusting companies (the claim process and financial settlement) and the service provided by contractors (repair works). It is not surprising that in terms of overall homeowner satisfaction, the two aspects (overall handling of the claim process and financial settlement) appear to be measuring the same underlying construct. This may be explained by the close interaction between the role of insurers and loss adjusters. It is not uncommon to find flood damage claims where insurers use their own in-house loss adjusters, in which case the ‘insurer’ and the ‘loss adjuster’ are one and the same entity. This does not however negate the fact that homeowners normally tend to evaluate the services individually as suggested by findings in the results of hypothesis 4 (refer to discussion in section 8.2.4 in this chapter).

In contrast, the service provided by the contractors is usually seen as largely unique and distinct from the other two services, culminating in completed repair works. However, it is also worth noting that in practice, the repair work may also be a product of several organisations dealing with the cleaning, drying, and repair and restoration of the property and contents (refer to section 2.7 from 41). However, this study was limited to evaluating the services provided by the three key service providers (refer to the scope of the study in section i) of Chapter 1).

8.2.4 Discussion of the results of Hypothesis 4 (H_4)

H_4: Of the three main service providers (insurers, loss adjusters and contractors) in insurance claims for the repair of flood-damaged property, homeowner satisfaction with the performance of loss adjusting firms will be the best predictor of overall homeowner satisfaction.

Hypothesis 4 concerned the extent to which the performance of each of the three main service providers (insurers, loss adjusters and contractors) in insurance claims for the repair of flood-damaged property, contribute to homeowner satisfaction. Multiple regression analysis was used for this purpose (refer to section 7.7 in Chapter 7).

Observe the equal contribution by the performance of the insurance company and that of the loss adjuster in predicting overall satisfaction with the process and the financial settlement of the claim. Loss adjuster are sometimes seen as “the face of the insurance company” in claims for the repair of flood damaged domestic property, insurers are not usually visible to homeowners during the claim. This suggests that the performance of both insurers and loss adjusters, when both are involved on a claim, is crucial to homeowner satisfaction, particularly overall satisfaction with the process and the financial settlement of the claim.

Homeowners pay a premium to their insurance company expecting to be ‘looked after’ in the event that a peril such as flooding materialises. In spite of another party such as a loss adjuster being involved in assessing the damage, recommending the extent of repair works and often supervising the repair process, insurers’ performance will still be evaluated by homeowners in determining their satisfaction. Therefore, insurance companies do well to maintain ‘visibility’, be involved and be seen to be involved throughout the claims process.

Although some insurers tend to distance themselves from the claims process, it appears that homeowners’ perceptions of the insurance services is as important, if not slightly more important, than perceptions of loss adjusters in determining homeowner satisfaction with the process. The findings validate and are consistent with those obtained in hypothesis 2 (refer to discussion in section 8.2.2 of this chapter). Among the antecedents of homeowner satisfaction with the performance of the insurance company, "insurers staying involved" was one of the two key issues.

Another noteworthy finding is the extent to which contractors influence overall homeowner satisfaction in insurance claims. Based on the derived model, contractor performance accounts for about seven times the combined contribution of insurers and loss adjusters' performance to overall homeowner satisfaction. Unfortunately, contractors are often the most visible face of the reinstatement process; they are also usually the last on the job by which time homeowners confidence in the whole process may have hit its lowest (refer to Figure 2.4). In addition, homeowner satisfaction with contractors' performance scored the lowest in insurance claims for flood-damaged domestic property (refer to section 7.7.6).

8.2.5 Discussion of the results of Hypothesis 5 (H_5)

H_5: There is a significant difference in mean scores of homeowner satisfaction of flood damage repairs for claims which took less than 6months, 6-11months and 12months and above to settle.

Hypothesis 5 concerned the relationship between **homeowner satisfaction** during a claim and the **time taken** from the flood event to the completion of repair works and settlement of the insurance claim. One-way between groups Analysis of Variance (ANOVA) was used for this purpose (refer to section 7.7.6 in Chapter 7).

The time taken for the claim to be settled, from the time of the flood event, is a significant factor in overall homeowner satisfaction. The satisfaction of homeowners whose claims were settled within six months differs significantly from those whose claims were settled after twelve months or more. The majority of claims with minimal extent of flood damage are usually completed within six months. Homeowners whose claims take twelve months or more could easily perceive the duration as unreasonably too long, even though the work required to be done may necessitate a longer period. Expectations of how long repair works take to complete will inevitably be influenced by any experiences other homeowners (neighbours, friends, families) may have had and if this differs, then they may perceive their reinstatement process to be taking too long.

Interestingly, there was no difference between the satisfaction levels of homeowner whose property repairs were completed within six months compared to those whose claims took six to eleven months. In addition, there was insufficient evidence of differences in the satisfaction levels of those whose claims were settled in six to eleven months compared with those whose claims took twelve months or more. It therefore appears that homeowners perceive six months to be a reasonable amount of time for a claim to be settled. In addition, it appears that homeowners may be able to tolerate a prolongation up to eleven months but beyond twelve months, their satisfaction will be significantly affected. Using Zeithaml and Bitner's (2000) conceptualisation of service quality, it appears that the three timescales may be viewed by homeowners as:

- Less than 6 months – desired service level or wished for level of performance,
- 6-11 months claim period – adequate service level or tolerable expectation, and
- 12 months and above – undesirable or unacceptable level of performance.

There are clear implications here for practice; service providers should ensure that claims are settled within twelve months as this appears to be the longest tolerable duration for settling flood damage claims. Only in very exceptional circumstances should the claim duration exceed twelve months. However, where it is anticipated that a claim will take longer than twelve months to settle, due to the extent of the repair works, for instance, it is crucial for service providers to effectively and consistently communicate this to the homeowner.

8.3 SUMMARY

While both the insurance and loss adjusters' services are crucial for homeowner satisfaction with the process of the claim, the contractor's level of service quality during the reinstatement process is a linchpin to homeowners' overall satisfaction. Contractors' performance during the claims process is the single most important contributor to homeowner satisfaction. Insurers wishing to be involved in the reinstatement process (as opposed to simply making a payout to the insured) do well to ensure that the chosen contractors are customer focused. Such customer focus includes ensuring that the property is kept as tidy as possible, inspiring homeowners with the confidence that their property and contents will be safe with the contractor and also being seen to have the homeowner's best interests at heart. The organisations engaged to do the repair work are expected to be of a size appropriate for the scale of work involved, while the workmen should demonstrate adequate knowledge and competence in problem solving while ensuring that the work is performed in a timely manner. To ignore these determinants of homeowner satisfaction (with contractors' services) would result in homeowners being dissatisfied with the entire process.

Overall, it should be noted that none of the models achieves an adjusted R^2 of 1.0 or 100%. This is to be fully expected when modelling using multiple regression analysis. The difference between the respective R^2 and the ideal maximum achievable of 1 (100%) is represented by the error term, e, in the general multiple regression equation. This accounts for factors that may influence satisfaction but which are not included in the regression model. These might include, for instance, incorporating the "time taken" to complete the reinstatement of the property into a single predictive satisfaction model. Also the models do not account for any variables that are specific to the homeowners' attributes, which may have some bearing on their satisfaction. However, the findings will be useful to various stakeholders as pointed out in the following concluding chapter of the research.

9.1 INTRODUCTION

After the 'wise man' had given a treatise of various issues about life and his quest for knowledge, Solomon ends his discourse of the bible book of Ecclesiastes by saying:

> *Let us hear the conclusion of the whole matter: Fear God, and keep his commandments: for this is the whole duty of man (Ecclesiastes 12:13 KJVR).*

Similarly, this research, which was a quest for greater understanding of service quality and satisfaction in insurance claims for the repair of flood damaged property deserves a good conclusion. Therefore this chapter represents a summary of all the findings as well the conclusion to the thesis, commencing with a reflection on what the study set out to investigate, what has been found, an abstract of the conclusions in point form, the implications of the work for practice and suggestions for further research. In addition it would constitute 'academic dishonesty' to claim that the work was without flaw; hence the limitations of the work and findings are also acknowledged in this chapter.

9.2 RECAPITULATIONS

The research set out to investigation homeowners' needs, service quality and satisfaction levels during the repair of flood damaged domestic properties: The following were the key objectives of the research:

i) To conduct a comprehensive literature review with the aims:

- To review the challenge of flood risk worldwide and specifically in the UK,
- To review the nature of flood events, their causes, and their impacts on households,
- To review the post-disaster recovery process within the context of insurance claims for domestic property,
- To review homeowners' needs and expectations with respect to flood damage reinstatement,

- To determine potential measures of service quality for insurance companies, loss adjusters and repairers, and

- To review potential determinants of homeowners' satisfaction with respect to services provided by insurers, loss adjusters and repairers.

ii) To investigate insurers' and repairers' perceptions of needs and factors that impact on the needs of homeowners during flood damage reinstatement;

iii) To investigate the actual needs of domestic property occupiers and compare them with those in (ii) above with a view to determine whether or not a gap exists;

iv) To investigate domestic properties occupiers' perceived satisfaction levels and determinants of satisfaction with respect to service quality during flood damage reinstatement;

v) To demystify the insurance flood damage claim chain, demonstrating the interrelationships and interactions of parties involved, together with the factors that impact upon their performance and the homeowner experience;

vi) To develop a mathematical model confirming the key determinants of homeowners' satisfaction by use of multiple regression analysis; and

vii) To validate the ensuing model(s) by testing their application to a hold-out sample.

To focus the investigation further, five hypotheses were advanced for further investigation in Chapter 4 (section 4.5.1) of this research and a recap of these hypotheses (H_1-H_5) is provided below:

H_1: The items that make up each of the three scales used to evaluate service quality of the three key services received by homeowners during flood-damage insurance claims can be reduced to a small set of underlying factors.

H_2: The same (or similar) service quality variables will predict homeowner satisfaction with each of the three service providers (Insurers, Loss Adjusters and contractors).

H_3: Overall homeowner satisfaction with the services received during insurance claims for the repair of flood-damaged property can be measured by multiple satisfaction variables, evaluating the process, financial aspects and the completed repair works.

H_4: Of the three main service providers (insurers, loss adjusters and contractors) in insurance claims for the repair of flood-damaged property, homeowner satisfaction with the performance of loss adjusting firms will be the best predictor of overall homeowner satisfaction.

H_5: There is no significant difference in mean scores of homeowner satisfaction of flood damage repairs for claims which took less than 6months, 6-11months and 12months and above to settle.

These hypotheses were investigated and tested using various statistical techniques such as principal components analysis, multiple regression analysis and analysis of variance (refer to Chapter 7 from page 174). A summary of the conclusions derived from the data analysis and hypothesis testing is presented below.

9.3 SUMMARY OF THE FINDINGS OF THE STUDY

This section presents a summary of the findings of the entire study, including the literature review, the qualitative (interview) data analysis and the quantitative (questionnaire survey) data analysis. This will be followed by the key conclusions and recommendations emerging from the study.

9.3.1 Summary of the literature review findings

A summary of the findings from the two literature review chapters (Chapter 2 and Chapter 3) are presented below.

i) Flooding is the single largest disaster worldwide, affecting some 167 million inhabitants of the world as at 2007.

ii) In the United Kingdom, nearly two million properties are at risk of river and coastal flooding, while an additional eighty thousand properties are at risk of flooding due to overwhelmed drains following heavy rainfall.

iii) The impact of flooding is generally influenced by several flood characteristics such as depth of floodwater, flood duration, velocity of floodwater, floodwater quality, and particular level and position of the property concerned.

iv) Although the causes (and liability) of flooding are often heavily contested by stakeholders after a flood event, the general sources of flooding include rivers and streams, the sea, groundwater, overland flow (especially over tarmac and other hard surfaces), blocked or overloaded drains and sewers, and broken water mains.

v) Flooding is a natural phenomenon, but when a flood event interacts with human settlements, there can be serious consequences such as damage to property, loss of life and livestock, loss of personal belongings, the inconvenience of living in temporary accommodation with its associated financial burden, stress, and other health effects.

vi) Flood cover is generally widely available in the UK as part of home insurance, thereby helping to minimise the financial impact of flood events on household, particularly when reinstating their properties to a pre-incident condition.

vii) The post-flood repair services that homeowners receive in through the insurance claim process, have not been spared criticism over the years for leaving homeowners dissatisfied due to various service short-comings such as irregular progress of repair works, poor standards of workmanship, the process taking too long, poor communication, and lack of responsiveness.

viii) Insurance claims for the repair of flood-damaged domestic property may best be understood in terms of the flood event, the project component, the homeowner component, and the service component.

ix) Needs and expectations are central in the concepts of satisfaction and service quality; while needs are the requirements to be fulfilled, what a customer expects (expectations) forms the basis upon which they evaluate their service experience.

9.3.2 Summary of findings from the Qualitative Data Analysis

A summary of the key findings from the analysis of the interview data is presented below.

i) An attempt to appreciate the whole range of aspects of homeowners' experience in flooding events uncovered five dimensions of homeowners' experiences following flood damage to their property, namely: economic aspects, emotional aspects, service-related aspects, social aspects and physical characteristics.

ii) Among other things, "easy access to insurers" was one homeowner requirement that service providers did not seem to appreciate as much as homeowners did in the interviews.

iii) Promptness in response as well as in carrying out the repair work on flood-damaged property was found to be a key expectation among homeowners, something which service providers seemed to appreciate.

iv) The most frequently cited causes of feelings of satisfaction among homeowners revolved around the themes of promptness, communication, empathy, and homeowner involvement in the process. The most frequently cited causes of feelings of dissatisfaction among homeowners were largely a reverse of the foregoing satisfaction determinants.

v) An understanding of their customers' experiences and requirements may be useful to service providers dealing with post-flood recovery, enabling them to formulate effective strategies to improve customer satisfaction.

9.3.3 Summary of findings from the Quantitative Data Analysis

A summary of the key findings from the analysis of survey data is presented below, against each of the hypotheses (H1-H5), which have been restated in section 9.2 of this chapter.

H1. The multivariate scales measuring homeowners' perceptions of the services received from their insurers, loss adjusters and contractors during flood-damage repairs could not be reduced to a few underlying factors. Instead, all three service scales revealed only one reliable and interpretable factor or underlying construct.

H2. The key variables that best predict homeowners' overall satisfaction with the three service providers will vary according to the service being evaluated, as follows:

- Insurance services - insurer trustworthiness and insurers staying involved in the claim process.
- Loss adjusters – loss adjuster providing homeowners with personal attention and having a caring and understanding attitude; promptness of services as per service promises; and loss adjusters maintaining accurate records of the claim/repair works.
- Contractors (repairers) – feeling safe to deal with the contractor's employees, the contractor doing their work in a timely manner, the contractor always keeping the property as tidy as possible, the size of the contractor's organisation to be appropriate for the scale of work, the contractor's employees to have the knowledge and competence to solve problems, and the contractor's organisation to have the homeowner's best interests at heart.

H3. Homeowners' overall satisfaction during claims can be effectively measured by two variables, namely satisfaction with the process plus financial settlement and satisfaction with the repair works.

H4. Of the three key service providers (insurers, loss adjusters and contractors), satisfaction with the performance of the contractor makes the largest contribution to predicting overall homeowner satisfaction as well as satisfaction with the overall repair works, while satisfaction with insurance services and those of loss adjusting firms are almost equally important to homeowners' overall satisfaction with the process and financial settlement.

H5. The time taken for the claim to be settled, from the time of the flood event, is a significant factor in overall homeowner satisfaction. The satisfaction of homeowners whose claims were settled within 6months differs significantly from those whose claims were settled after 12months or more. There was no statistically significant difference in homeowner satisfaction between those whose claims were settled within 6months versus those whose claims were settled in 6-11months. Neither was there any difference in the satisfaction of homeowners whose claims were settled in 6-11months versus those whose claims took 12months or more.

9.4 CONCLUSIONS

A study on a topic such as satisfaction will inevitably be fraught with challenges, partly due to the potential subjective nature of the construct of service quality and satisfaction. However, the research was conducted in a rigorous manner enabling the following inferences and conclusions to be drawn in the context of flood-damage repairs to domestic properties in the UK:

i) Although some previous studies have been critical of insurers' and loss adjusters' performance, this study has found that homeowners were actually less satisfied with contractors than with their insurers and loss adjusters during insurance claims for flood-damage repair works.

ii) Ironically, homeowner satisfaction with contractors' performance during insurance claims is the single most important determinant of homeowner satisfaction, accounting for about seven times the combined contribution of insurers' and loss adjusters' performance.

iii) The key determinants for homeowner satisfaction with insurers' performance appear to be service aspects related to assurance and responsiveness.

iv) The key determinants for homeowner satisfaction with Loss adjusters' performance appear to be service aspects related to reliability, empathy and responsiveness.

v) The key determinants for homeowner satisfaction with contractors' performance appear to be service aspects related to tangibles, assurance, reliability and empathy.

vi) Overall homeowner satisfaction levels will significantly differ for homeowners whose repairs were completed within six months compared to those whose claims took twelve months or more.

9.5 LIMITATIONS OF THE RESEARCH

The extensive discussion of scales based on the SERVQUAL framework, in literature, clearly shows that the measure is not without criticisms. However, adoption of elements of the framework was only done after subsequent modification to make the scale industry-specific. In addition, the resultant instrument was subjected to a piloting after being scrutinised by a panel of experts. The data collected in this study could not support the existence of multiple factors/dimensions of service quality and hence comparison of findings with those from other industries was not possible. However, this research still provides critical information for domestic property insurance service providers since the results highlight the predictors of satisfaction.

Although the results may also be useful to insurance providers in other sectors such as automobile casualty, future research should examine predictors of service quality and satisfaction in other areas of insurance, given that the nature of the particular insurance line may influence service quality and satisfaction perceptions.

One of the challenges faced by researchers in social sciences is that of data compliance with the assumptions associated with the statistical techniques employed in the data analysis and hypothesis testing. A high degree of correlation amongst the variables that make up each of the three scales used to measure service quality for insurers, loss adjusters and repairers was one such challenge. This has been acknowledged throughout the data analysis and where necessary its potential effect measured. For instance, as a result of such high degrees of correlation, all multiple regression models were tested for multicollinearity. Although multicollinearity was found to exist, the extent to which its presence might pose a problem was evaluated under each hypothesis that employed MRA and was found to be minimal in each case.

Another issue that is acknowledged in this research is that of sample size. Despite efforts to increase the response rate, only a modest return was obtained. Larger samples might potentially enhance the robustness and accuracy of derived models.

9.6 RECOMMENDATIONS FOR FURTHER WORK

The following are the recommendations that emerged from conducting this research:

1) The need for a larger sample, enabling the use of larger subsets to be utilised, thereby enhancing the potential for accuracy as well as model robustness. It has been highlighted in the discussion section that the sample size for the various subsets was rather small and hence, it may be argued that the accuracy of the resulting models may be slightly diminished;

2) The need to further investigate dissatisfied customer within the context of customer loyalty and behaviour in the aftermath of flood damage repair works to determine whether or not homeowners do switch insurance companies and if so what factors influence their decisions;

3) Further research to be undertaken that will account for other variables that may not have been not included in the regression models such as homeowners' personal attributes to determine whether or not model accuracy can be improved further; and

4) Homeowners cited the need for flexibility during the repair process as one of their expectations. In particular, further research on the extent to which loss adjusters

recommend incorporation of flood resilient strategies in the repair works, insurers' response to such measures being undertaken and homeowners' perceptions of resilient repairs.

9.7 RECOMMENDATIONS FOR PRACTICE

The following are the recommendations for practice in the repair of flood damaged domestic properties which are insured against flood:

1) Great care should be taken to choose suitable contractors because their performance is the greatest single contributor to homeowners' overall satisfaction;

2) Insurers ought to maintain close contact with their policyholders and should be involved and 'visible' to homeowners throughout the claim process;

3) Both insurance companies and contractors need to ensure that they are assuring and are perceived by homeowners to be trustworthy;

4) Both loss adjusters and contractors ought to aim at providing their services in a dependable and accurate manner while projecting a caring attitude and dealing with each claim with as much individualised attention as possible;

5) All stakeholders in insurance claims ought to aim at minimising the duration of claims to six months or at the very worst 11 months;

6) All service providers should ensure they communicate accurate and consistent information to homeowners, especially with regards to important aspects such as anticipated timescales for the repair process.

9.8 SUMMARY

Both the frequency of flooding and the number of properties at risk of flooding are forecast to increase in the UK. Recent major floods in England and Wales in recent months and years have served to demonstrate once again the challenges posed by flooding to communities. Costs associated with flooding are usually significant and range from repair of flood damaged infrastructure (for instance roads and water supply facilities), disruption to businesses, operational costs for emergency services as well as for the repair of flood-damaged property. In addition, there is the human side of flood impacts which this study argues usually receives less focus than the economic cost as a result of damage to tangible infrastructure.

The first stage of the data collection in this study identified five dimensions of encapsulating homeowners' experiences following flood damage to their property, namely: economic aspects, emotional aspects, service-related aspects, social aspects and physical characteristics. These present service providers who deal with flood recovery with a more holistic insight into their customers' experiences and associated requirements. As a result, organisations may be able to formulate more effective strategies to improve customer satisfaction during insurance claims for the repair of flood-damaged domestic properties.

The time taken for the claim to be settled, from the time of the flood event, is a significant factor in overall homeowner satisfaction. Project teams handling the repair and reinstatement process need to ensure that small claims take the shortest possible time to complete. Where claims will take longer than twelve months, service providers need to effectively communicate with homeowners to ensure that their expectations are realistic. In addition, the insurance company and loss adjusters' services are important to homeowner satisfaction and hence the two service providers need to be involved and be seen to stay involved throughout the claim process. As far as homeowners' **overall satisfaction** is concerned, the contractor performance in the reinstatement process is a linchpin. Their performance during the claims process is the single most important contributor to homeowner overall satisfaction. The choice of contractor should therefore be an important consideration for insurers and loss adjusters involved in the repair process.

The findings of the research will be beneficial to all stakeholders involved in the claim chain and should lead to improved services for insured flood victims thereby minimising the impact of flooding events on households. Specifically, knowledge of the determinants of homeowner satisfaction should be useful to service providers in determining which areas have the most significant impact on homeowners' service experience. The derived models could also be used by insurers, loss adjusters and contractors to predict satisfaction in the process of repairing flood damaged domestic properties.

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A. INTERVIEW PROFORMA FOR HOMEOWNERS

B. INTERVIEW PROFORMA FOR SERVICE PROVIDERS

C. IN-DEPTH INTERVIEW QUESTIONS - HOMEOWNERS

D. IN-DEPTH INTERVIEW QUESTIONS - INSURERS

E. IN-DEPTH INTERVIEW QUESTIONS – LOSS ADJUSTERS

F. IN-DEPTH INTERVIEW QUESTIONS – CONTRACTORS

G. PILOT QUESTIONNAIRE EVALUATION

H. COVERING LETTER FOR MAIN QUESTIONNAIRE

I. SAMPLE OF MAIN QUESTIONNAIRE

J. SATISFACTION MEASURES

K. RELIABILITY TESTING

L. HYPOTHESIS 1 (H_1) ANALYSIS OUTPUT

M. HYPOTHESIS 2 (H_2) ANALYSIS OUTPUT

N. HYPOTHESIS 3 (H_3) ANALYSIS OUTPUT

O. HYPOTHESIS 4 (H_4) ANALYSIS OUTPUT

P. HYPOTHESIS 5 (H_5) ANALYSIS OUTPUT

APPENDIX A: INTERVIEWEE PROFORMA FOR HOMEOWNERS

SECTION 1	PERSONAL DETAILS OF RESPONDENT						DATE AND TIME:
	Your name will not be revealed or in any way be associated with your response; It may only be used to follow up for further clarification and additional information. If you wish to remain anonymous, you may do so.						
1.1.	Your Name *(Optional)*						
1.2.	Sex	Female 1☐	Male 2☐				
1.3.	Age	0-14 1☐	15-19 2☐	20-24 3☐	25-39 4☐	40-59 5☐	60+ 6☐
1.4.	Occupation	Professional/managerial ☐	Clerical/admin ☐	Skilled manual ☐			
		Semi-skilled/unskilled manual ☐	Housewife/househusband ☐				
		Unemployed ☐	Student ☐	Other (specify) ☐			
1.5.	Contact Address *(Optional)*						
	Telephone						
	Facsimile						
	E-mail Address						
1.6.	Income *(per annum)*	Less than £ 8,000 1☐	£20,001 – 30,000 4☐				
		£8,001 – 10,000 2☐	£30,001 – 40,000 5☐				
		£10,001 – 20,000 3☐	£40,001 + 6☐				
1.7.	What is the highest level of formal education that you completed?						
	Primary sch. 1☐	Secondary school 2☐	Vocational 3☐	Graduate 4☐	Post graduate 5☐		
1.8.	What Professional Qualifications do you possess?						
1.9.	What is your marital status?						
	Single (*never married*) 1☐	Married 2☐	Widowed 3☐	Divorced 4☐	Separated 5☐		
1.10.	How many members in household?						
1.11.	Disability/illness (*Tick all that apply*)	Not applicable ☐	Long-term disability ☐	Long-term illness ☐			
1.12.	Dwelling type	Detached house/ Bungalow ☐	Semi-detached house ☐	Row/terrace house ☐			
		Flat/Maisonette ☐	Other ☐				
1.13.	Housing Tenure	Owned out right ☐	Mortgaged ☐	Rented ☐	Other ☐		
1.14.	Value of property	**£**					

SECTION 2	OTHER USEFUL BACKGROUND INFORMATION			
2.1	Have you experienced flood (or storm) damage to your home before?	Yes ☐	No ☐	
2.2	If so, how many times have you suffered flood damage?	Once ☐	Twice ☐	Thrice or more ☐
2.3	If, the answer to 2.1 above is yes, when was your latest flood damage experience?	Date		
2.4	What was the cause of flooding?	Coastal storm ☐	Blocked or overloaded sewers/drainage backflow ☐	
	Run-off flow due to heavy rainfall ☐	River/stream Overflow ☐	Rising Groundwater levels ☐	
2.5	Type of Insurance Cover	Buildings ☐	Contents ☐	Both ☐
2.6	Which insurance company insured your buildings and contents? (*State both if different*)			
2.7	Which insurance policy did you make a claim under?	Buildings ☐	Contents ☐	Both ☐
2.8	How much did you claim under your buildings and contents insurance policies, respectively?	**£**		
2.9	Has the insurance company settled the amount claimed?	Yes ☐	No ☐	
2.10	What was the value of the excess that you paid for the reinstatement, if applicable?	**£**		

APPENDIX B: INTERVIEWEE PROFORMA FOR SERVICE PROVIDERS

SECTION 1	**PERSONAL DETAILS OF RESPONDENT**								
	DATE OF INTERVIEW:					**TIME:**			
	Your name will not be revealed or in any way be associated with your response; It may only be used to follow up for further clarification and additional information. If you wish to remain anonymous, you may do so.								
1.1.	Your Name *(Optional)*								
1.2.	Your Job Title/position								
1.3.	Name of Employer								
1.4.	Contact Address								
	Telephone								
	Facsimile								
	E-mail Address								
1.5.	Your company's experience in flood related work (in years).	0-2	**1** ☐	3-5	**2** ☐	6-10	**3** ☐	11+	**4** ☐
1.6.	Your experience in flood related work (in years).	0-2	**1** ☐	3-5	**2** ☐	6-10	**3** ☐	11+	**4** ☐
1.7.	What is the highest level of formal education that you completed?								
	Primary school **1** ☐	Secondary school **2** ☐		Vocational **3** ☐		Graduate **4** ☐		Postgraduate **5** ☐	
1.8.	What Professional Qualifications do you possess?								

3. In-depth Interview Questions - HOMEOWNERS

Interviews with Homeowners – Key Questions		***Prompts, if necessary***
	In the context of flood damage and repair works to domestic properties:	
1.	Describe your experience of flooding to your home, in terms of: ❑ What were the characteristics of the flood itself – duration, depth, extent of flood damage to adjacent properties, whether anticipated or not, presence of contaminants (sewerage, pollutants)? ❑ What do you consider as your personal situation before/at the time of the flood, i.e. health status, stress levels? ❑ Were you evacuated after your home was flooded? If so, how long did you live in "temporary" accommodation? ❑ How suitable was the accommodation (quality, comparability, proximity to home) ❑ Who arranged the accommodation? Any extra cost to the homeowner? How quickly was the accommodation arranged? ❑ What different parties were involved in the claims process? Insurer, Loss Adjusters, Public Loss Assessor, repairer, etc. ❑ Did you choose your own contractor?	
2.	What were your feelings when you first realised that your home was flooded?	
3.	What do you perceive was the impact of the flood damage (to your home) on your life?	
4.	What were your requirements (needs regarding services by insurers, repairers, loss adjusters, etc.) following flood damage to your home? (*In terms of time, quality, health and safety, commitment, flexibility, financial, relations and communication, etc.*)	
5.	What factors determine the severity of the impact of flooding on your household? (in general)	
6.	What are your expectations of the services provided by insurers during a flood-damage claim?	
7.	What are your expectations of the services provided by repairers/contractors during a flood-damage claim?	
8.	What are your expectations of the services provided by loss adjusters during a flood-damage claim?	
9.	If the latest claim was not your first experience of flood damage to your home, what were your expectations of the services provided by service providers during flood-damage claims in your previous experiences?	
10.	What are likely to be your expectations of the services provided by insurers during flood-damage reinstatement if you were to suffer flood damage to your home (God forbid) in future? (*Will your expectations change in anyway?*)	
11.	What criteria do (would) you use to assess performance of insurers?	
12.	What criteria do (would) you use to assess performance of repairers/contractors?	
13.	What criteria do (would) you use to assess performance of loss adjusters?	
14.	Customer satisfaction. ❑ What are the key factors that determine your satisfaction in a flood damage claim? ❑ Were you satisfied with the services received from your insurers during the process of the claim? If you were dissatisfied, what factors led to your dissatisfaction? ❑ Were you satisfied with the services received from your repairers/contractor during the repair of your flood damaged home? If you were dissatisfied, what factors led to your dissatisfaction? ❑ Were you satisfied with the services offered by other parties such as Loss adjusters and/or Public Loss Assessor (*if involved*) during the repair of your flood damaged home? If you were dissatisfied, what factors led to your dissatisfaction?	

4. In-depth Interview Questions - INSURERS

Interviews with Insurers (Claims assessors/team leaders) **- Key Questions**		***Prompts, if necessary***
	In the context of flood damage and repair works to domestic properties:	
1.	What are the requirements (needs) of homeowners following flood damage to their home?	
2.	What factors determine the severity of the impact of flooding on homeowners following flood damage to their properties?	
3.	What are expectations of homeowners with respect to the services provided by insurers during flood-damage reinstatement?	
4.	What are the expectations of homeowners with respect to the services provided by repairers during flood-damage reinstatement?	
5.	What are your expectations of homeowners during flood-damage reinstatement?	
6.	What are your expectations of repairers during flood-damage reinstatement?	
7.	What are the key determinants of homeowners' satisfaction with respect to reinstatement of their flood damaged homes?	
8.	What are the characteristics (representing the nature of participant) that affect the actual performance of repairers (damage management specialists)?	
9.	What level of performance do you require from repairers	
10.	What criteria do (would) you usually use to assess performance of repairers?	

5. *In-depth Interview Questions - CONTRACTORS*

Interviews with Repairers - Key Questions		***Prompts, if necessary***
	In the context of flood damage and repair works to domestic properties:	
1.	What are the requirements (needs) of homeowners following flood damage to their home?	
2.	What factors determine the severity of the impact of flooding on homeowners following flood damage to their properties?	
3.	What are the expectations of homeowners with respect to the services provided by insurers during flood-damage reinstatement?	
4.	What are the expectations of homeowners with respect to the services provided by repairers during flood-damage reinstatement?	
5.	What are your expectations of homeowners with respect to flood-damage reinstatement?	
6.	What are your expectations of insurers with respect to flood-damage reinstatement?	
7.	What are the key determinants of homeowners' satisfaction with respect to reinstatement of their flood damaged homes?	
8.	What are the characteristics (representing the nature of participant) that affect the actual performance of insurers?	
9.	What level of performance do you require from insurers?	
10.	What criteria do (would) you usually use to assess performance of insurers?	

6. In-depth Interview Questions – LOSS ADJUSTERS

	Interviews with Loss Adjusters – Key Questions	***Prompts, if necessary***
	In the context of flood damage and repair works to domestic properties:	
1.	What do you perceive as the impact of flood damage on a household?	
2.	What factors determine the severity of the impact of flooding on homeowners?	
3.	What are the requirements (needs regarding services by insurers, repairers, loss adjusters, etc.) of homeowners following flood damage to their home? (*In terms of:* *Time, quality, health and safety, commitment, flexibility, financial, relations and communication, etc.*)	
4.	What are the expectations of homeowners with respect to the services provided by insurers during a flood-damage claim?	
5.	What are your expectations of homeowners with respect to the services provided by contractors during a flood-damage claim?	
6.	What are your expectations of homeowners with respect to the services provided by restoration companies during a flood-damage claim?	
7.	What are the expectations of homeowners with respect to the services provided by Loss Adjusters during a flood-damage claim?	
8.	What are your expectations of homeowners during a flood-damage claim?	
9.	What are your expectations of insurance companies during a flood-damage claim?	
10.	What are your expectations of contractors companies during a flood-damage claim?	
11.	What are your expectations of restoration companies during a flood-damage claim?	
12.	Customer satisfaction. ❑ What are the key factors that determine homeowners’ satisfaction in a domestic flood damage claim? ❑ What causes the greatest dissatisfaction of homeowners in a domestic flood damage claim?	
13.	What criteria do (would) you use to assess performance of insurers?	
14.	What criteria do (would) you use to assess performance of repairers/contractors?	
15.	What criteria do (would) you use to assess performance of restoration companies?	
	Mr./Mrs. XXXX, thank you for your time and willingness to participate in this research. It’s been a pleasure speaking with you. Goodbye.	

G. PILOT QUESTIONNAIRE EVALUATION

What do you think about the "Homeowner Satisfaction Questionnaire"?

Kindly evaluate the questionnaire you have just completed on the topic of flood repair works, in terms of the layout, question design and content. Your comments will help improve the questionnaire before sending it to a larger section of the community to be completed.

Content

1. Were any questions difficult to answer? Yes ☐ No☐
2. If your answer to question 1 is "Yes", which questions were difficult to answer and why?

Question No.	**Why difficult to answer**

3. Were any questions unclear or ambiguous? Yes ☐ No ☐

   If your answer is "Yes", which questions were unclear/ambiguous and what do you suggest?

Question No.	**Suggestion**

4. Were the instructions for completing the questionnaire clear? Yes ☐ No☐

If your answer to question 4 is "No", which instructions were unclear?

5. Do you have any comments or suggestions on the questionnaire content? (*use separate sheet if required*)

6. Were any answer options not covered in the responses to any question? If so, specify the question number and suggested options (*use separate sheet if required*)

Question No.	**Suggestion**

Layout

7. Was the layout clear and attractive? Yes ☐ No☐ *Comment*: ____________________
8. Was the font size suitable? Yes ☐ No☐ *Comment*: ____________________
9. Where do you prefer to see the section entitled **“Section 6 - About You”** in the questionnaire?

   At the beginning ☐ At the end ☐ No preference ☐

10. Was there enough space for answers? Yes ☐ No☐

    If “No”, Specify which Questions ____

11. Do you have any comments or suggestions on the questionnaire layout? (*use separate sheet if required*)

Miscellaneous

12. How long did it take you to complete the questionnaire? _______ minutes
13. Did you object to answering any particular question(s)? No ☐ Yes ☐

    If your answer is “Yes”, which question(s) did you object to and why?

Question No.	Why you objected to answering the question.

14. What other aspects that you haven't already mentioned can be changed to improve the questionnaire? (*use separate sheet if required*)

15. Would you be willing to briefly discuss the feedback you provided above?

No ☐ Yes ☐ <u>If your answer is “Yes”, please provide your contact details below</u>:

Name: ____

Telephone: _____________________________________

Email: ____

End of Evaluation Form

Thank You For Your Co-Operation.

H. COVERING LETTER FOR MAIN QUESTIONNAIRE SURVEY

17th February 2005

Dear Sir or Madam,

RE: Research on homeowner satisfaction during flood damage repair works

You are invited to take part in a study of homeowners' perception of the services they receive from insurers, loss adjusters, and contractors/repairers in the event of flood damage to their domestic property. The purpose of this research is to examine homeowners' satisfaction levels and key factors that determine homeowners' satisfaction in the repair of flood damaged domestic property. Once service providers embrace the findings from this study, the result should be improved services and increased satisfaction for insured homeowners.

The study is being conducted by the **Flood Research Group** (website: http://asp2.wlv.ac.uk/sebe/fr/) at the University of Wolverhampton and has generated a lot of interest particularly from organisations such as: the National Flood Forum, ABI, BDMA and several insurers, loss adjusters and contractors.

Please kindly complete the attached questionnaire if you:

- own a home that is insured against flooding; and
- have recently (2000-2004) experienced flood damage to your home; and
- subsequently claimed on your insurance policy following flood damage to your property; and
- the claim for the repair/restoration of your flood damaged property has now been settled.

In completing the questionnaire, please kindly tell us what happened during your most recent insurance flood claim. In view of the significance of the research project, I would be grateful if you complete the attached questionnaire as accurately as possible and return it to me as soon as possible, within 2 weeks of receiving it, **using the enclosed FREEPOST self-addressed envelope (no stamp required)**. We can assure you that all details and information collected in this survey will be treated with strict confidence, in accordance with academic ethics standards. Your name is not required and hence will not in any way be associated with your answer.

If there is anything you do not fully understand or wish to clarify, please ask us for additional information or further clarification (Phone: **01902 xxxxxx**). Thank you in anticipation of your response.

Yours faithfully,

National Flood Forum

Victor Samwinga [BSc. M.Sc. PGCertEd. MAQS ICIOB ILTM]

APPENDIX I: SAMPLE QUESTIONNAIRE [HOMEOWNER SATISFACTION]

Do you own a home? Is your home insured against flooding? Have you recently (2000-2004) experienced flood damage to your home? Did you claim against your insurance policy and has the claim been settled? If your answer to these questions is yes, then, please kindly spare a little of your time to complete this questionnaire as accurately as you possibly can. Your name is not required and hence will not in any way be associated with your answer.

Unless otherwise stated, please tick the box (☑) that best represents your answer to each of the questions.

	SECTION 1 - BACKGROUND INFORMATION					
1.1	Have you ever experienced flood damage to your home?	Yes 1☐	No 2☐			
1.2	If so, how many times have you suffered flood damage?	Once 1☐	Twice 2☐	More than twice 3☐		
1.3	If your answer to 1.1 above is yes, when was your most recent experience of flood damage?	Date: ➲	D D M M Y Y			
1.4	What was the cause of flooding?	Sea 1☐	River/stream 2☐	Burst mains water pipe 3☐		
	Run-off flow due to heavy rainfall 4☐	Blocked or overloaded sewers/drainage 5☐	Other 6☐ (*Please Specify*) ➲			
1.5	How much time of advance warning did you have regarding the risk of flooding?					
	None at all 1☐	Less than 2hrs. 2☐	2-4hrs. 3☐	5-8hrs. 4☐	9-12hrs. 5☐	Over 12hrs. 6☐
1.6	What was the depth of the floodwater that entered your property?					
	Below ground floor level 1☐	Up to half a meter above floor level 2☐	More than half a meter above floor level 3☐			
1.7	How long was the floodwater in your property?					
	Less than 2hrs 1☐	2-6hrs. 2☐	7-12hrs. 3☐	13-23hrs. 4☐	1-3days 5☐	Over 3days 6☐
1.8	Did the floodwater that entered your home noticeably contain any contaminants such as sewage or oils?	Yes 1☐	No 2☐			
1.9	If you temporarily moved out of your home after the flooding event, how long did you stay out of your home?					
	Less than 3months 1☐	3-6months 2☐	7-12months 3☐	Over 12months 4☐	Not applicable 5☐	
1.10	What type of insurance cover did you have at the time of the flood? (*Tick all that apply*)	Buildings 1☐	Contents 2☐			
1.11	Which company insured your buildings and contents?	Buildings ➲		Contents ➲		
1.12	Which insurance policy did you make a claim under? (*Tick all that apply*)	Buildings 1☐	Contents 2☐			
1.13	How much was your claim on the <u>buildings insurance policy</u>?					
	Below £2500 1☐	£2501-£5000 2☐	£5001-£15000 3☐	Over £15000 4☐	Don't Know 5☐	
1.14	How much was your claim on the <u>contents insurance policy</u>?					
	Below £1000 1☐	£1000-£2500 2☐	£2501-£5000 3☐	Over £5000 4☐	Don't Know 5☐	
1.15	Has your claim for the buildings and/or contents been settled by your insurance company?	Yes 1☐	No 2☐			
1.16	How long did it take for your claim to be settled, from the time of the flood event?					
	Less than 6months 1☐	6-11months 2☐	12-18months 3☐	18-24months 4☐	Over 24months 5☐	
1.17	If any member of your household has any disability/illness, how satisfied were you that their needs were catered for by your insurers?					
	Satisfied 1☐	Neither / nor 2☐	Dissatisfied 3☐	Not applicable 4☐		
1.18	What category best describes your property type?	Bungalow 1☐	Detached house 2☐	Semi-detached house 3☐		
	Row/terrace house 4☐	Flat/Maisonette 5☐	Other (*state*) 6☐ (*Specify*) ➲			
1.19	Housing Tenure	Owned out right 1☐	Mortgaged 2☐	Rented 3☐	Other 4☐ (*Specify*) ➲	
1.20	What's the approximate current value of your property?					
	Less than £150,000 1☐	£150,001-£300,000 2☐	£300,001-£500,000 3☐	Over £500,000 4☐		
1.21	How many were you in your household at the time of the flooding? ➲		(*Number*)			
1.22	What different parties were involved in your claim? (*Please tick all that apply*)					
	Insurance company	Yes 1☐	No 2☐	Don't know 3☐		
	Loss Adjusters	Yes 1☐	No 2☐	Don't know 3☐		
	Contractor/repairer	Yes 1☐	No 2☐	Don't know 3☐		
	Cleaning/drying firm	Yes 1☐	No 2☐	Don't know 3☐		
	Other(s) (*Please <u>specify below</u>*)	Yes 1☐	No 2☐	Don't know 3☐		
	(*Please specify e.g. Loss Assessor, Independent Surveyor*) ➲					

	SECTION 2 - THE INSURANCE COMPANY'S SERVICES							
	The following questions refer to your most recent claim experience following flood damage to your domestic property. **On a scale of 0-6, please rate the following aspects of the services you received from your Insurance company (Insurer) in comparison to your original expectations of what the service would be.** (*If any of the statements do not apply to the service you received, please leave that question blank*).							
	EXPECTATIONS VERSUS YOUR PERCEPTIONS OF THE SERVICE	**Lower than I expected**						**Higher than I expected**
	Tangibles (*i.e. physical facilities, equipment, and appearance of personnel*)	**0**	**1**	**2**	**3**	**4**	**5**	**6**
2.1	The insurance company's staff were always tidy and had a professional appearance	☐	☐	☐	☐	☐	☐	☐
2.2	The insurance company's vehicles visiting the site appeared visually appealing	☐	☐	☐	☐	☐	☐	☐
2.3	The insurance company's solutions to problems were appropriate	☐	☐	☐	☐	☐	☐	☐
2.4	The insurance company's employees were never too busy to respond to my requests	☐	☐	☐	☐	☐	☐	☐
2.5	I found it easy to get in touch with employees of the insurance company	☐	☐	☐	☐	☐	☐	☐
2.6	The insurance company's employees had the knowledge and competence to solve my problems	☐	☐	☐	☐	☐	☐	☐
2.7	The insurance company understood my problems	☐	☐	☐	☐	☐	☐	☐
2.8	The insurance company stayed involved with my claim	☐	☐	☐	☐	☐	☐	☐
2.9	The insurance company's employees had experience relevant to the services I required	☐	☐	☐	☐	☐	☐	☐
	Reliability (*i.e. ability to perform the promised service dependably and accurately*)							
2.10	The insurance company's employees fulfilled promises in a timely manner	☐	☐	☐	☐	☐	☐	☐
2.11	The insurance company's employees were sympathetic when I had a problem	☐	☐	☐	☐	☐	☐	☐
2.12	The insurance company's employees were dependable	☐	☐	☐	☐	☐	☐	☐
2.13	The insurance company maintained accurate records of my policy and claim	☐	☐	☐	☐	☐	☐	☐
2.14	The insurance company provided a consistent single point of contact throughout the claim	☐	☐	☐	☐	☐	☐	☐
	Responsiveness (*i.e. willingness to help customers and provide prompt service*)							
2.15	The insurer told me when they would perform services for me	☐	☐	☐	☐	☐	☐	☐
2.16	Employees of the insurance company returned telephone calls promptly	☐	☐	☐	☐	☐	☐	☐
2.17	The insurance company provided prompt services (such as decisions, payments)	☐	☐	☐	☐	☐	☐	☐
2.18	The insurance company and its employees were always willing to help me	☐	☐	☐	☐	☐	☐	☐
	Assurance (*i.e. employees' knowledge, courtesy and their ability to inspire trust and confidence*)							
2.19	The insurance company was trustworthy	☐	☐	☐	☐	☐	☐	☐
2.20	I felt safe in my dealings with the insurance company's employees	☐	☐	☐	☐	☐	☐	☐
2.21	The insurance company's employees were always polite to me	☐	☐	☐	☐	☐	☐	☐
2.22	The company provided support for employees so that they could perform their jobs well	☐	☐	☐	☐	☐	☐	☐
	Empathy (*i.e. caring, individualised attention provided by the firm*)							
2.23	The insurance company's employees provided me with personal attention and were caring and understanding	☐	☐	☐	☐	☐	☐	☐
2.24	The insurance company's employees understood my needs/requirements	☐	☐	☐	☐	☐	☐	☐
2.25	The insurance company's employees had only my best interests at heart and the company ensured that my claim was settled fairly	☐	☐	☐	☐	☐	☐	☐
	SATISFACTION WITH THE INSURANCE COMPANY'S SERVICES	**Very Dissatisfied**						**Very Satisfied**
	Based on your recent claim, please rate your overall satisfaction or dissatisfaction with:	**0**	**1**	**2**	**3**	**4**	**5**	**6**
2.26	The insurance company's service in terms of physical facilities, equipment, and appearance of personnel	☐	☐	☐	☐	☐	☐	☐
2.27	The ability of the insurance company's employees to perform the promised service dependably and accurately	☐	☐	☐	☐	☐	☐	☐
2.28	The willingness of the insurance company employees to help you and to provide prompt services	☐	☐	☐	☐	☐	☐	☐
2.29	The knowledge, courtesy and ability of insurance company's employees to inspire trust and confidence	☐	☐	☐	☐	☐	☐	☐
2.30	The care and individualised attention provided by the insurance company's employees during the claim	☐	☐	☐	☐	☐	☐	☐
2.31	The insurance company's overall performance during the claim	☐	☐	☐	☐	☐	☐	☐
2.32	On a scale of 0-6, how would you rate the insurance company's overall level of service quality during the claim?	☐	☐	☐	☐	☐	☐	☐

	SECTION 3 - THE LOSS ADJUSTER'S SERVICES							
	The following questions refer to your most recent claim experience following flood damage to your domestic property. **On a scale of 0-6, please rate the following aspects of the services you received from the Loss Adjuster's company in comparison to your original expectations of what the service would be.** (*If any of the statements do not apply to the service you received, please leave that question blank*).							
	EXPECTATIONS VERSUS YOUR PERCEPTIONS OF THE SERVICE	**Lower than I expected**						**Higher than I expected**
	Tangibles (*i.e. physical facilities, equipment, and appearance of personnel*)	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3.1	The loss adjusters were always tidy and had a professional appearance	☐	☐	☐	☐	☐	☐	☐
3.2	The loss adjuster's vehicles visiting the site appealing visually appealing	☐	☐	☐	☐	☐	☐	☐
3.3	The loss adjuster's solutions to problems were appropriate	☐	☐	☐	☐	☐	☐	☐
3.4	The loss adjuster was never too busy to respond to my requests	☐	☐	☐	☐	☐	☐	☐
3.5	I found it easy to get in touch with the loss adjuster	☐	☐	☐	☐	☐	☐	☐
3.6	The loss adjuster had the knowledge and competence to solve my problems	☐	☐	☐	☐	☐	☐	☐
3.7	The loss adjuster understood my problems	☐	☐	☐	☐	☐	☐	☐
3.8	The loss adjuster stayed involved with my claim	☐	☐	☐	☐	☐	☐	☐
3.9	The loss adjuster had experience relevant to the services I required	☐	☐	☐	☐	☐	☐	☐
3.10	The loss adjuster coordinated the contractors and the repair work very well	☐	☐	☐	☐	☐	☐	☐
3.11	The loss adjuster and I had similar views about things that were important to me	☐	☐	☐	☐	☐	☐	☐
	Reliability (*i.e. ability to perform the promised service dependably and accurately*)							
3.12	The loss adjuster fulfilled promises in a timely manner	☐	☐	☐	☐	☐	☐	☐
3.13	The loss adjuster was sympathetic when I had a problem	☐	☐	☐	☐	☐	☐	☐
3.14	The loss adjusting firm 's employees were dependable	☐	☐	☐	☐	☐	☐	☐
3.15	The loss adjuster maintained accurate records of the claim/repair works	☐	☐	☐	☐	☐	☐	☐
3.16	The loss adjusting firm provided a consistent single point of contact throughout the claim	☐	☐	☐	☐	☐	☐	☐
	Responsiveness (*i.e. willingness to help customers and provide prompt service*)							
3.17	The loss adjuster told me when they would perform services for me	☐	☐	☐	☐	☐	☐	☐
3.18	Employees of the loss adjusting firm returned telephone calls promptly	☐	☐	☐	☐	☐	☐	☐
3.19	The loss adjusting firm provided prompt services	☐	☐	☐	☐	☐	☐	☐
3.20	The loss adjusting firm and it's employees were always willing to help me	☐	☐	☐	☐	☐	☐	☐
	Assurance (*i.e. employees' knowledge, courtesy and their ability to inspire trust and confidence*)							
3.21	The loss adjusting firm was trustworthy	☐	☐	☐	☐	☐	☐	☐
3.22	I felt safe in my dealings with the employees of the loss adjuster's firm	☐	☐	☐	☐	☐	☐	☐
3.23	The loss adjuster was always polite to me	☐	☐	☐	☐	☐	☐	☐
3.24	The loss adjuster's firm provided support for employees so that they could perform their jobs well	☐	☐	☐	☐	☐	☐	☐
	Empathy (*i.e. caring, individualised attention provided by the firm*)							
3.25	The loss adjuster provided me with personal attention and were caring and understanding	☐	☐	☐	☐	☐	☐	☐
3.26	The loss adjuster understood my needs/requirements	☐	☐	☐	☐	☐	☐	☐
3.27	The loss adjuster had only my best interests at heart and the firm ensured my claim was settled fairly	☐	☐	☐	☐	☐	☐	☐
	SATISFACTION WITH LOSS ADJUSTER'S SERVICES	**Very Dissatisfied**						**Very Satisfied**
	Based on your recent claim, please rate your overall satisfaction or dissatisfaction with:	**0**	**1**	**2**	**3**	**4**	**5**	**6**
3.28	The loss adjuster's service in terms of physical facilities, equipment, and appearance of personnel	☐	☐	☐	☐	☐	☐	☐
3.29	The loss adjuster's ability to perform the promised service dependably and accurately	☐	☐	☐	☐	☐	☐	☐
3.30	The willingness of the loss adjuster to help you and to provide prompt services	☐	☐	☐	☐	☐	☐	☐
3.31	The knowledge, courtesy and ability of loss adjuster to inspire trust and confidence	☐	☐	☐	☐	☐	☐	☐
3.32	The care and individualised attention provided by the loss adjuster during the claim	☐	☐	☐	☐	☐	☐	☐
3.33	The loss adjusting firm's overall performance during the claim	☐	☐	☐	☐	☐	☐	☐
3.34	On a scale of 0-6, how would you rate the loss adjusting firm's overall level of service quality during the claim?	☐	☐	☐	☐	☐	☐	☐

	SECTION 4 - THE REPAIRER/CONTRACTOR'S SERVICES							
	The following questions refer to your most recent claim experience following flood damage to your domestic property. **On a scale of 0-6, please rate the following aspects of the services you received from the Repairer/Contractor in comparison to your original expectations of what the service would be.** (*If any of the statements do not apply to the service you received, please leave that question blank*).							
	EXPECTATIONS VERSUS YOUR PERCEPTIONS OF THE SERVICE	**Lower than I expected**						**Higher than I expected**
	Tangibles (*i.e. physical facilities, equipment, and appearance of personnel*)	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4.1	The contractor's staff were always tidy and had a professional appearance	☐	☐	☐	☐	☐	☐	☐
4.2	The appearance of the contractor's vehicles visiting the site appeared visually appealing	☐	☐	☐	☐	☐	☐	☐
4.3	The contractor's solutions to problems were appropriate	☐	☐	☐	☐	☐	☐	☐
4.4	The contractor's employees were never too busy to respond to my requests	☐	☐	☐	☐	☐	☐	☐
4.5	I found it easy to get in touch with employees of the contractor's organisation	☐	☐	☐	☐	☐	☐	☐
4.6	The contractor's employees had the knowledge and competence to solve my problems	☐	☐	☐	☐	☐	☐	☐
4.7	The contractor understood my problems	☐	☐	☐	☐	☐	☐	☐
4.8	The contractor had experience relevant to the service I required	☐	☐	☐	☐	☐	☐	☐
4.9	The contractor's organisation provided adequate site supervision of the repair works	☐	☐	☐	☐	☐	☐	☐
4.10	The contractor and I had similar views about things that were important to me	☐	☐	☐	☐	☐	☐	☐
4.11	The condition and appearance of the contractor's tools and equipment was up-to-date	☐	☐	☐	☐	☐	☐	☐
4.12	The quality/finish of repair work undertaken was good	☐	☐	☐	☐	☐	☐	☐
4.13	The contractor always kept the property tidy	☐	☐	☐	☐	☐	☐	☐
4.14	The contractor ensured protection, covering and care of existing structure, finishes and contents	☐	☐	☐	☐	☐	☐	☐
4.15	The size of the contractor's organisation was appropriate for the scale of work	☐	☐	☐	☐	☐	☐	☐
	Reliability (*i.e. ability to perform the promised service dependably and accurately*)							
4.16	The contractor's employees fulfilled promises in a timely manner	☐	☐	☐	☐	☐	☐	☐
4.17	The contractor's employees were sympathetic when I had a problem	☐	☐	☐	☐	☐	☐	☐
4.18	The contractor's employees were dependable	☐	☐	☐	☐	☐	☐	☐
4.19	The contractor maintained accurate records of the claim/repair works	☐	☐	☐	☐	☐	☐	☐
4.20	The contractor did the work in a timely manner	☐	☐	☐	☐	☐	☐	☐
4.21	The contractor's organisation provided a consistent single point of contact throughout the claim	☐	☐	☐	☐	☐	☐	☐
	Responsiveness (*i.e. willingness to help customers and provide prompt service*)							
4.22	The contractor told me when they would perform services for me	☐	☐	☐	☐	☐	☐	☐
4.23	Employees of the contractor's organisation returned telephone calls promptly	☐	☐	☐	☐	☐	☐	☐
4.24	The contractor's organisation provided prompt services	☐	☐	☐	☐	☐	☐	☐
4.25	The contractor's organisation and its employees were always willing to help me	☐	☐	☐	☐	☐	☐	☐
	Assurance (*i.e. employees' knowledge, courtesy and their ability to inspire trust and confidence*)							
4.26	The contractor's organisation was trustworthy	☐	☐	☐	☐	☐	☐	☐
4.27	I felt safe in my dealings with the contractor's employees	☐	☐	☐	☐	☐	☐	☐
4.28	The contractor's employees were always polite to me	☐	☐	☐	☐	☐	☐	☐
4.29	The contractor's organisation provided support for employees so that they could perform their jobs well	☐	☐	☐	☐	☐	☐	☐
	Empathy (*i.e. caring, individualised attention provided by the firm*)							
4.30	The contractor's employees provided me with personal attention and were caring and understanding	☐	☐	☐	☐	☐	☐	☐
4.31	The contractor's employees understood my needs/requirements	☐	☐	☐	☐	☐	☐	☐
4.32	The contractor's employees came to work on the property at times convenient to my individual schedules	☐	☐	☐	☐	☐	☐	☐
4.33	The contractor's organisation had only my best interests at heart and the company ensured that the repair work was carried out in a timely manner	☐	☐	☐	☐	☐	☐	☐
	SATISFACTION WITH THE CONTRACTOR'S SERVICES	**Very Dissatisfied**						**Very Satisfied**
	Based on your recent claim, please rate your overall satisfaction or dissatisfaction with:	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4.34	The contractor's service in terms of physical facilities, equipment and appearance of personnel	☐	☐	☐	☐	☐	☐	☐
4.35	The contractor's ability to perform the promised service dependably and accurately	☐	☐	☐	☐	☐	☐	☐
4.36	The willingness of the contractor's employees to help you and to provide prompt services	☐	☐	☐	☐	☐	☐	☐

	SATISFACTION WITH THE CONTRACTOR'S SERVICES	Very Dissatisfied						Very Satisfied
	Based on your recent claim, please rate your overall satisfaction or dissatisfaction with:	**0**	**1**	**2**	**3**	**4**	**5**	**6**
4.37	The knowledge, courtesy and ability of contractor's employees to inspire trust and confidence	☐	☐	☐	☐	☐	☐	☐
4.38	The care and individualised attention provided by the contractor's employees during the claim	☐	☐	☐	☐	☐	☐	☐
4.39	The contractor's overall performance during the claim	☐	☐	☐	☐	☐	☐	☐
4.40	On a scale of 0-6, how would you rate the contractor's overall level of service quality during the claim?	☐	☐	☐	☐	☐	☐	☐

	OVERALL SATISFACTION AND SERVICE QUALITY DURING YOUR RECENT CLAIM							
5.1	Did you compare your service with what other homeowners received during their claim for repair works?	Yes	1☐	No	2☐			
	If your answer to 5.1 is yes, please rate your overall satisfaction on a scale of 0-6 compared with services received by other homeowners (Questions 5.2-5.3)	Very Dissatisfied						Very Satisfied
		0	**1**	**2**	**3**	**4**	**5**	**6**
5.2	The way your claim was *handled compared with the service other homeowners received*	☐	☐	☐	☐	☐	☐	☐
5.3	The repairs on your property *compared with the service other homeowners received*	☐	☐	☐	☐	☐	☐	☐
	Based on your recent claim, please rate the following on a scale of 0-6:	**0**	**1**	**2**	**3**	**4**	**5**	**6**
5.4	Your overall satisfaction with the process of handling your claim	☐	☐	☐	☐	☐	☐	☐
5.5	Your overall satisfaction with the financial settlement of your claim	☐	☐	☐	☐	☐	☐	☐
5.6	Your overall satisfaction with the finished repair/restoration work on your property	☐	☐	☐	☐	☐	☐	☐
5.7	Give a description of your overall impression and experience of the services you received during the repair/restoration of your flood-damaged property (*use attached separate sheet if required*).							

SECTION 5 - ABOUT YOU

Please kindly complete this section of the questionnaire to enable us make relevant comparisons. Your name is not required and hence will not in any way be associated with your answer.

6.1	Gender		6.2	Age		6.3	Household Income per annum	
	Female	1☐		Below 20	1☐		Less than £ 30,000	1☐
	Male	2☐		20-29	2☐		£30,001 – 50,000	2☐
				30-39	3☐		£50,001 – 100,000	3☐
				40-59	4☐		£100,001 – 200,000	4☐
				Over 60	5☐		Over £200,000	5☐

6.4 Which of these best describes your occupation? Unskilled 1☐ | Semi-skilled 2☐ | Skilled manual 3☐
Professional/Executive 4☐ | Clerical/administrative 5☐ | Self-employed 6☐ | Student 7☐ | Retired 8☐
Housewife/househusband 9☐ | Unemployed 10☐ | Other 11☐ | *(Please specify)* ➲

6.5 Which of these best describes your ethnic background? White (UK or other) 1☐ | Asian or Asian British 2☐
Mixed 3☐ | Chinese 4☐ | Black or Black British 5☐ | Other 6☐ *(Please specify)* ➲

6.6 What are the first letters of your home postcode?➲ B | S | 3 | 2

6.7 What is your marital status? Single 1☐ | Married 2☐ | Widowed 3☐ | Divorced 4☐ | Separated 5☐

CONTACT DETAILS FOR FURTHER INFORMATION

Please note that the information collected through the survey will be kept strictly confidential and will be available only to members of the research team. Results from the survey may be made part of the final research report or other research publications such as conference papers or journal articles, but under no circumstances will your name or any identifying characteristics, be included in such publications.

Should you have any queries, contact me (**Victor Samwinga**) on:
Tel: 01902 323585; E-mail: V.Samwinga@wlv.ac.uk

Professor David Proverbs is directing the project and can be contacted on: Tel: 01902 322786; E-mail: D.Proverbs@wlv.ac.uk

END OF QUESTIONNAIRE

Please check that you have not accidentally omitted to answer any question(s).
I will appreciate if you return the completed questionnaire as soon as possible, using the self-addressed envelope provided.

Thank you for your cooperation and for taking part in this research project.

Separate sheet for any additional comments

(Please cross-reference your comments to the specific questions or section they relate to in this questionnaire, wherever possible)

J. SATISFACTION MEASURES

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.804
Bartlett's Test of Sphericity	Approx. Chi-Square	387.228
	df	15
	Sig.	.000

Correlation Matrix

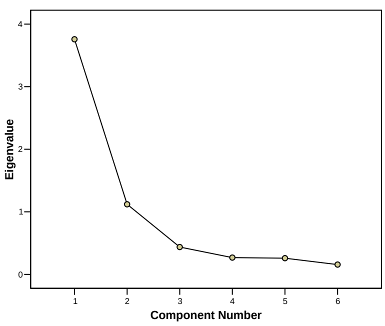
		SAT_ INSURER	SAT_LOSS ADJUSTER	SAT_ CONTRACTOR	OSAT_CLAIM PROCESS	OSAT_FINANCIAL ASPECTS	OSAT_ REPAIRS
Correlation	SAT_INSURER	1.000	.745	.282	.723	.575	.364
	SAT_LOSS ADJUSTER	**.745**	1.000	.323	.799	.624	.391
	SAT_CONTRACTOR	.282	.323	1.000	.359	.409	.705
	OSAT_CLAIM PROCESS	**.723**	**.799**	.359	1.000	.740	.539
	OSAT_FINANCIAL ASPECTS	.575	.624	.409	**.740**	1.000	.573
	OSAT_REPAIRS	.364	.391	**.705**	.539	.573	1.000

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**3.757**	62.624	62.624	3.757	62.624	62.624
2	**1.120**	18.673	81.296	1.120	18.673	81.296
3	.437	7.288	88.584			
4	.269	4.479	93.063			
5	.259	4.316	97.379			
6	.157	2.621	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix[a]

	Component	
	1	2
SAT_INSURER	.796	-.382
SAT_LOSS ADJUSTER	.841	-.353
SAT_CONTRACTOR	.608	.690
OSAT_CLAIM PROCESS	.899	
OSAT_FINANCIAL ASPECTS	.840	
OSAT_REPAIRS	.730	.567

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

ROTATION BY VARIMAX

Rotated Component Matrix[a]

	Component	
	1	2
SAT_INSURER	**.876**	
SAT_LOSS ADJUSTER	**.897**	
SAT_CONTRACTOR		**.910**
OSAT_CLAIM PROCESS	**.879**	
OSAT_FINANCIAL ASPECTS	**.720**	.432
OSAT_REPAIRS	.303	**.873**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	2.973	49.549	49.549
2	1.905	31.747	81.296

Extraction Method: Principal Component Analysis.

Component Transformation Matrix

Component	1	2
1	.838	.545
2	-.545	.838

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

K. RELIABILITY TESTING

RELIABILITY TESTING FOR INSURANCE SERVICE SCALE

Reliability Statistics

Cronbach's Alpha	N of Items
.986	25

Item Statistics

	Mean	Std. Deviation	N
INSURER - staff appearance	1.54	2.245	57
Insurer - vehicle appearance	4.07	1.237	57
Insurer - solutions were appropriate	3.84	1.859	57
Insurer - never too busy	3.77	1.871	57
Insurer - easy to contact insurer	3.60	1.869	57
Insurer - knowledge & competence	4.00	1.701	57
Insurer - understood my problems	3.96	1.870	57
Insurer - stayed involved	3.81	1.968	57
Insurer - relevant experience	3.86	1.747	57
INSURER - fulfilled promises timely	3.68	1.713	57
Insurer - sympathetic to problems	3.81	1.726	57
Insurer - dependable	3.91	1.735	57
Insurer - maintained records	3.93	1.720	57
Insurer - consistent point of contact	3.79	1.790	57
INSURER - told when to expect services	3.75	1.806	57
Insurer - returned calls promptly	3.81	1.885	57
Insurer - prompt services	3.77	1.955	57
Insurer - willing to help me	3.89	1.979	57
INSURER - trustworthy	4.40	1.591	57
Insurer - felt safe to deal with	4.25	1.672	57
Insurer - were polite	4.40	1.510	57
Insurer - support for employees	4.02	1.653	57
INSURER - personal attention	3.79	1.820	57
Insurer - understood my needs	3.84	1.761	57
Insurer - had my interests at heart	4.00	1.973	57

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
INSURER - staff appearance	93.96	1488.713	.152	**.991**
Insurer - vehicle appearance	91.44	1450.179	.726	.987
Insurer - solutions were appropriate	91.67	1387.869	.930	.985
Insurer - never too busy	91.74	1385.519	.941	.985
Insurer - easy to contact insurer	91.91	1391.796	.895	.986
Insurer - knowledge & competence	91.51	1402.433	.901	.986
Insurer - understood my problems	91.54	1387.431	.927	.985
Insurer - stayed involved	91.70	1384.963	.896	.986
Insurer - relevant experience	91.65	1397.482	.916	.986
INSURER - fulfilled promises timely	91.82	1404.076	.881	.986
Insurer - sympathetic to problems	91.70	1396.356	.936	.985
Insurer - dependable	91.60	1392.995	.958	.985
Insurer - maintained records	91.58	1407.427	.850	.986
Insurer - consistent point of contact	91.72	1408.491	.807	.986
INSURER - told when to expect services	91.75	1405.081	.826	.986
Insurer - returned calls promptly	91.70	1384.106	.945	.985
Insurer - prompt services	91.74	1386.876	.889	.986
Insurer - willing to help me	91.61	1375.170	.961	.985
INSURER - trustworthy	91.11	1411.739	.885	.986
Insurer - felt safe to deal with	91.26	1405.340	.893	.986
Insurer - were polite	91.11	1420.810	.852	.986
Insurer - support for employees	91.49	1400.933	.941	.985
INSURER - personal attention	91.72	1393.348	.909	.986
Insurer - understood my needs	91.67	1395.155	.927	.985
Insurer - had my interests at heart	91.51	1378.897	.937	.985

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
95.51	1520.112	38.989	25

RELIABILITY TESTING FOR LOSS ADJUSTER SERVICE SCALE

Reliability Statistics

Cronbach's Alpha	N of Items
.994	27

Item Statistics

	Mean	Std. Deviation	N
LADJ - staff appearance	4.44	1.363	62
LAdj - vehicle appearance	4.35	1.307	62
LAdj - solutions were appropriate	4.27	1.812	62
LAdj - never too busy	4.00	1.959	62
LAdj - easy to contact insurer	3.92	1.994	62
LAdj - knowledge & competence	4.15	1.845	62
LAdj - understood my problems	4.19	1.915	62
LAdj - stayed involved	4.15	1.991	62
LAdj - relevant experience	4.26	1.828	62
LAdj - coordinated contractors & repairs	3.95	2.028	62
LAdj - we had similar views on important issues	4.18	1.904	62
LADJ - fulfilled promises timely	4.11	1.926	62
LAdj - sympathetic to problems	4.19	1.957	62
LAdj - dependable	4.29	1.693	62
LAdj - maintained records	4.13	1.963	62
LAdj - consistent point of contact	3.98	2.100	62
LADJ - told when to expect services	4.05	1.937	62
LAdj - returned calls promptly	4.21	1.839	62
LAdj - prompt services	4.15	1.982	62
LAdj - willing to help me	4.24	1.914	62
LADJ - trustworthy	4.40	1.842	62
LAdj - felt safe to deal with	4.29	1.902	62
LAdj - were polite	4.66	1.503	62
LAdj - support for employees	4.34	1.659	62
LADJ - personal attention	4.23	1.987	62
LAdj - understood my needs	4.23	1.979	62
LAdj - had my interests at heart	4.19	1.974	62

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
LADJ - staff appearance	109.11	2069.577	.864	.994
LAdj - vehicle appearance	109.19	2083.601	.781	.994
LAdj - solutions w ere appropriate	109.27	2021.284	.945	.993
LAdj - never too busy	109.55	2009.137	.943	.993
LAdj - easy to contact insurer	109.63	2005.352	.947	.993
LAdj - know ledge & competence	109.40	2015.064	.966	.993
LAdj - understood my problems	109.35	2009.282	.964	.993
LAdj - stayed involved	109.40	2004.507	.954	.993
LAdj - relevant experience	109.29	2017.324	.961	.993
LAdj - coordinated contractors & repairs	109.60	2014.343	.879	.994
LAdj - w e had similar view s on important issues	109.37	2012.139	.953	.993
LADJ - fulfilled promises timely	109.44	2018.152	.905	.993
LAdj - sympathetic to problems	109.35	2005.380	.966	.993
LAdj - dependable	109.26	2031.637	.944	.993
LAdj - maintained records	109.42	2022.575	.861	.994
LAdj - consistent point of contact	109.56	2009.299	.875	.994
LADJ - told w hen to expect services	109.50	2018.057	.900	.994
LAdj - returned calls promptly	109.34	2021.572	.928	.993
LAdj - prompt services	109.40	2010.376	.924	.993
LAdj - w illing to help me	109.31	2011.659	.951	.993
LADJ - trustw orthy	109.15	2018.552	.946	.993
LAdj - felt safe to deal w ith	109.26	2009.145	.972	.993
LAdj - w ere polite	108.89	2063.118	.828	.994
LAdj - support for employees	109.21	2042.660	.887	.994
LADJ - personal attention	109.32	2002.419	.968	.993
LAdj - understood my needs	109.32	2002.255	.973	.993
LAdj - had my interests at heart	109.35	2007.511	.945	.993

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
113.55	2178.481	46.674	27

RELIABILITY TESTING FOR CONTRACTOR SERVICE SCALE

Case Processing Summary

		N	%
Cases	Valid	75	59.5
	Excluded[a]	51	40.5
	Total	126	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.993	33

Item Statistics

	Mean	Std. Deviation	N
KTOR - staff appearance	3.81	1.392	75
Ktor - vehicle appearance	3.81	1.411	75
Ktor - solutions were appropriate	3.76	1.754	75
Ktor - never too busy	3.69	1.732	75
Ktor - easy to contact contractor	3.77	1.798	75
Ktor - knowledge & competence	3.81	1.814	75
Ktor - understood my problems	3.84	1.801	75
Ktor - relevant experience	4.03	1.755	75
Ktor - good level of supervision	3.72	1.886	75
Ktor - we had similar views on important issues	3.64	1.950	75
Ktor - up-to-date equipment and tools	3.99	1.538	75
Ktor - good quality of repair works	3.83	1.913	75
Ktor - kept property tidy	3.68	1.795	75
Ktor - protection to existing structure and contents	3.77	1.760	75
Ktor - size of contractor's org.	3.83	1.811	75
KTOR - fulfilled promises timely	3.64	1.843	75
Ktor - sympathetic to problems	3.68	1.757	75
Ktor - dependable	3.60	1.882	75
Ktor - maintained records	3.64	1.760	75
Ktor - did work in timely manner	3.65	1.878	75
Ktor - consistent point of contact	3.91	1.876	75
KTOR - told when to expect services	3.72	1.752	75
Ktor - returned calls promptly	3.61	1.916	75
Ktor - prompt services	3.52	1.906	75
Ktor - willing to help me	3.76	1.746	75
KTOR - trustworthy	4.00	1.896	75
Ktor - felt safe to deal with	3.89	1.963	75
Ktor - were polite	4.29	1.549	75
Ktor - support for employees	3.71	1.844	75
KTOR - personal attention	3.89	1.783	75
Ktor - understood my needs	3.88	1.778	75
Ktor - came to work at convinient times	3.77	1.907	75
Ktor - had my interests at heart	3.57	2.106	75

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
KTOR - staff appearance	120.92	2779.858	.809	.993
Ktor - vehicle appearance	120.92	2785.021	.762	.993
Ktor - solutions were appropriate	120.97	2730.215	.912	.993
Ktor - never too busy	121.04	2731.715	.916	.993
Ktor - easy to contact contractor	120.96	2727.336	.905	.993
Ktor - knowledge & competence	120.92	2723.939	.915	.993
Ktor - understood my problems	120.89	2722.556	.930	.993
Ktor - relevant experience	120.71	2734.426	.888	.993
Ktor - good level of supervision	121.01	2712.473	.939	.993
Ktor - we had similar views on important issues	121.09	2711.545	.912	.993
Ktor - up-to-date equipment and tools	120.75	2752.570	.902	.993
Ktor - good quality of repair works	120.91	2716.734	.903	.993
Ktor - kept property tidy	121.05	2728.484	.900	.993
Ktor - protection to existing structure and contents	120.96	2739.985	.855	.993
Ktor - size of contractor's org.	120.91	2737.707	.842	.993
KTOR - fulfilled promises timely	121.09	2716.302	.941	.993
Ktor - sympathetic to problems	121.05	2727.700	.925	.993
Ktor - dependable	121.13	2714.820	.929	.993
Ktor - maintained records	121.09	2733.843	.889	.993
Ktor - did work in timely manner	121.08	2718.264	.913	.993
Ktor - consistent point of contact	120.83	2731.659	.843	.993
KTOR - told when to expect services	121.01	2736.581	.878	.993
Ktor - returned calls promptly	121.12	2713.053	.921	.993
Ktor - prompt services	121.21	2711.008	.937	.993
Ktor - willing to help me	120.97	2726.648	.937	.993
KTOR - trustworthy	120.73	2721.198	.888	.993
Ktor - felt safe to deal with	120.84	2708.109	.923	.993
Ktor - were polite	120.44	2759.088	.854	.993
Ktor - support for employees	121.03	2722.188	.909	.993
KTOR - personal attention	120.84	2722.974	.937	.993
Ktor - understood my needs	120.85	2721.911	.946	.993
Ktor - came to work at convinient times	120.96	2712.796	.927	.993
Ktor - had my interests at heart	121.16	2690.569	.940	.993

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
124.73	2900.523	53.856	33

L. HYPOTHESIS 1 (H_1) ANALYSIS OUTPUT

FACTOR ANALYSIS RESULTS – INSURANCE SERVICE

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	2357.392
	df	300
	Sig.	.000

Communalities

	Initial	Extraction
INSURER - staff appearance	1.000	.769
Insurer - vehicle appearance	1.000	.508
Insurer - solutions were appropriate	1.000	.830
Insurer - never too busy	1.000	.862
Insurer - easy to contact insurer	1.000	.806
Insurer - knowledge & competence	1.000	.824
Insurer - understood my problems	1.000	.862
Insurer - stayed involved	1.000	.818
Insurer - relevant experience	1.000	.829
INSURER - fulfilled promises timely	1.000	.853
Insurer - sympathetic to problems	1.000	.903
Insurer - dependable	1.000	.914
Insurer - maintained records	1.000	.792
Insurer - consistent point of contact	1.000	.612
INSURER - told when to expect services	1.000	.797
Insurer - returned calls promptly	1.000	.847
Insurer - prompt services	1.000	.813
Insurer - willing to help me	1.000	.908
INSURER - trustworthy	1.000	.811
Insurer - felt safe to deal with	1.000	.838
Insurer - were polite	1.000	.784
Insurer - support for employees	1.000	.866
INSURER - personal attention	1.000	.848
Insurer - understood my needs	1.000	.879
Insurer - had my interests at heart	1.000	.795

Extraction Method: Principal Component Analysis.

Correlation Matrix

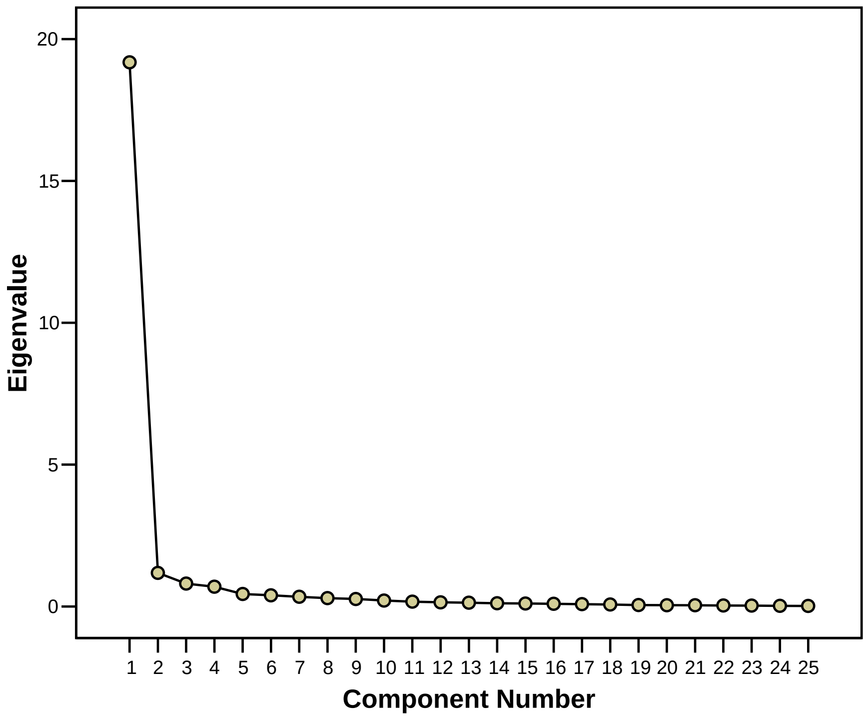
	Item	INSURER - staff appearance	Insurer - vehicle appearance	Insurer - solutions were appropriate	Insurer - never too busy	Insurer - easy to contact insurer	Insurer - knowledge & competence	Insurer - understood my problems	Insurer - stayed involved	Insurer - relevant experience	INSURER - fulfilled promises timely	Insurer - sympathetic to problems	Insurer - dependable	Insurer - maintained records	Insurer - consistent point of contact	INSURER - told when to expect services	Insurer - returned calls promptly	Insurer - prompt services	Insurer - willing to help me	INSURER - trustworthy	Insurer - felt safe to deal with	Insurer - were polite	Insurer - support for employees	INSURER - personal attention	Insurer - understood my needs	Insurer - had my interests at heart
Correlation	INSURER - staff appearance	1.000	0.193	0.097	0.077	0.102	0.033	0.041	-0.015	0.026	-0.047	0.081	0.063	-0.019	0.000	-0.053	0.056	0.034	0.128	0.106	0.084	0.067	0.053	0.037	0.047	0.095
	Insurer - vehicle appearance	0.193	1.000	0.621	0.616	0.550	0.564	0.551	0.475	0.562	0.480	0.594	0.544	0.469	0.448	0.438	0.570	0.444	0.524	0.411	0.437	0.453	0.533	0.527	0.541	0.569
	Insurer - solutions were appropriate	0.097	0.621	1.000	0.915	0.852	0.833	0.849	0.813	0.818	0.776	0.866	0.830	0.697	0.650	0.756	0.813	0.777	0.843	0.778	0.806	0.783	0.813	0.797	0.814	0.826
	Insurer - never too busy	0.077	0.616	0.915	1.000	0.909	0.853	0.851	0.794	0.827	0.797	0.893	0.853	0.701	0.653	0.723	0.852	0.812	0.891	0.804	0.810	0.803	0.850	0.831	0.840	0.810
	Insurer - easy to contact insurer	0.102	0.550	0.852	0.909	1.000	0.851	0.846	0.765	0.812	0.770	0.855	0.811	0.687	0.593	0.703	0.838	0.805	0.849	0.791	0.776	0.778	0.803	0.813	0.819	0.730
	Insurer - knowledge & competence	0.033	0.564	0.833	0.853	0.851	1.000	0.900	0.806	0.877	0.808	0.884	0.851	0.746	0.724	0.775	0.846	0.739	0.844	0.748	0.776	0.750	0.830	0.831	0.842	0.741
	Insurer - understood my problems	0.041	0.551	0.849	0.851	0.846	0.900	1.000	0.853	0.904	0.806	0.872	0.862	0.764	0.667	0.767	0.853	0.780	0.861	0.799	0.844	0.791	0.846	0.856	0.880	0.834
	Insurer - stayed involved	-0.015	0.475	0.813	0.794	0.765	0.806	0.853	1.000	0.839	0.825	0.808	0.864	0.837	0.720	0.888	0.774	0.824	0.799	0.740	0.776	0.741	0.795	0.766	0.782	0.745
	Insurer - relevant experience	0.026	0.562	0.818	0.827	0.812	0.877	0.904	0.839	1.000	0.810	0.867	0.859	0.782	0.661	0.795	0.832	0.730	0.834	0.764	0.804	0.764	0.857	0.828	0.844	0.797
	INSURER - fulfilled promises timely	-0.047	0.480	0.776	0.797	0.770	0.808	0.806	0.825	0.810	1.000	0.865	0.917	0.883	0.735	0.814	0.811	0.876	0.832	0.791	0.796	0.784	0.799	0.799	0.824	0.761
	Insurer - sympathetic to problems	0.081	0.594	0.866	0.893	0.855	0.884	0.872	0.808	0.867	0.865	1.000	0.941	0.786	0.702	0.771	0.863	0.814	0.902	0.843	0.843	0.820	0.881	0.892	0.893	0.823
	Insurer - dependable	0.063	0.544	0.830	0.853	0.811	0.851	0.862	0.864	0.859	0.917	0.941	1.000	0.873	0.768	0.826	0.858	0.870	0.900	0.848	0.852	0.811	0.867	0.870	0.893	0.847
	Insurer - maintained records	-0.019	0.469	0.697	0.701	0.687	0.746	0.764	0.837	0.782	0.883	0.786	0.873	1.000	0.744	0.841	0.765	0.805	0.772	0.780	0.792	0.763	0.772	0.746	0.775	0.736
	Insurer - consistent point of contact	0.000	0.448	0.650	0.653	0.593	0.724	0.667	0.720	0.661	0.735	0.702	0.768	0.744	1.000	0.747	0.706	0.676	0.689	0.640	0.638	0.591	0.682	0.659	0.668	0.619
	INSURER - told when to expect services	-0.053	0.438	0.756	0.723	0.703	0.775	0.767	0.888	0.795	0.814	0.771	0.826	0.841	0.747	1.000	0.786	0.799	0.778	0.722	0.750	0.730	0.765	0.759	0.774	0.723
	Insurer - returned calls promptly	0.056	0.570	0.813	0.852	0.838	0.846	0.853	0.774	0.832	0.811	0.863	0.858	0.765	0.706	0.786	1.000	0.828	0.918	0.824	0.831	0.823	0.832	0.830	0.845	0.784
	Insurer - prompt services	0.034	0.444	0.777	0.812	0.805	0.739	0.780	0.824	0.730	0.876	0.814	0.870	0.805	0.676	0.799	0.828	1.000	0.881	0.845	0.840	0.823	0.803	0.786	0.821	0.789
	Insurer - willing to help me	0.128	0.524	0.843	0.891	0.849	0.844	0.861	0.799	0.834	0.832	0.902	0.900	0.772	0.689	0.778	0.918	0.881	1.000	0.878	0.893	0.875	0.891	0.872	0.897	0.856
	INSURER - trustworthy	0.106	0.411	0.778	0.804	0.791	0.748	0.799	0.740	0.764	0.791	0.843	0.848	0.780	0.640	0.722	0.824	0.845	0.878	1.000	0.950	0.900	0.877	0.832	0.837	0.795
	Insurer - felt safe to deal with	0.084	0.437	0.806	0.810	0.776	0.776	0.844	0.776	0.804	0.796	0.843	0.852	0.792	0.638	0.750	0.831	0.840	0.893	0.950	1.000	0.880	0.912	0.837	0.862	0.814
	Insurer - were polite	0.067	0.453	0.783	0.803	0.778	0.750	0.791	0.741	0.764	0.784	0.820	0.811	0.763	0.591	0.730	0.823	0.823	0.875	0.900	0.880	1.000	0.853	0.803	0.814	0.760
	Insurer - support for employees	0.053	0.533	0.813	0.850	0.803	0.830	0.846	0.795	0.857	0.799	0.881	0.867	0.772	0.682	0.765	0.832	0.803	0.891	0.877	0.912	0.853	1.000	0.893	0.892	0.826
	INSURER - personal attention	0.037	0.527	0.797	0.831	0.813	0.831	0.856	0.766	0.828	0.799	0.892	0.870	0.746	0.659	0.759	0.830	0.786	0.872	0.832	0.837	0.803	0.893	1.000	0.964	0.873
	Insurer - understood my needs	0.047	0.541	0.814	0.840	0.819	0.842	0.880	0.782	0.844	0.824	0.893	0.893	0.775	0.668	0.774	0.845	0.821	0.897	0.837	0.862	0.814	0.892	0.964	1.000	0.905
	Insurer - had my interests at heart	0.095	0.569	0.826	0.810	0.730	0.741	0.834	0.745	0.797	0.761	0.823	0.847	0.736	0.619	0.723	0.784	0.789	0.856	0.795	0.814	0.760	0.826	0.873	0.905	1.000
	Min	**0.411**	**0.650**	**0.653**	**0.593**	**0.724**	**0.667**	**0.720**	**0.661**	**0.735**	**0.702**	**0.768**	**0.736**	**0.591**	**0.722**	**0.784**	**0.786**	**0.856**	**0.795**	**0.814**	**0.760**	**0.826**	**0.873**	**0.905**	**0.905**	**0.905**
	Max	**0.621**	**0.915**	**0.909**	**0.855**	**0.900**	**0.904**	**0.888**	**0.867**	**0.917**	**0.941**	**0.900**	**0.841**	**0.747**	**0.799**	**0.918**	**0.881**	**0.897**	**0.950**	**0.912**	**0.853**	**0.893**	**0.964**	**0.905**	**0.905**	**0.905**
	Avergae	0.054	0.518	0.805	0.817	0.785	0.806	0.824	0.796	0.802	0.819	0.841	0.853	0.774	0.665	0.759	0.835	0.823	0.880	0.865	0.861	0.807	0.870	0.919	0.953	0.953

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.182	76.726	76.726	19.182	76.726	76.726
2	1.186	4.746	81.472	1.186	4.746	81.472
3	.809	3.235	84.707			
4	.696	2.784	87.491			
5	.440	1.758	89.249			
6	.395	1.579	90.828			
7	.343	1.372	92.200			
8	.295	1.179	93.379			
9	.265	1.059	94.437			
10	.211	.846	95.283			
11	.172	.688	95.971			
12	.148	.590	96.562			
13	.133	.531	97.093			
14	.115	.460	97.553			
15	.107	.428	97.981			
16	.096	.384	98.365			
17	.083	.331	98.696			
18	.070	.281	98.977			
19	.051	.205	99.182			
20	.047	.187	99.370			
21	.045	.180	99.549			
22	.036	.143	99.692			
23	.033	.133	99.826			
24	.023	.092	99.918			
25	.020	.082	100.000			

Extraction Method: Principal Component Analysis.

Scree Plot



Component Matrix[a]

	Component	
	1	2
Insurer - dependable	.955	
Insurer - willing to help me	.950	
Insurer - sympathetic to problems	.949	
Insurer - understood my needs	.938	
Insurer - support for employees	.930	
Insurer - understood my problems	.928	
INSURER - personal attention	.921	
Insurer - never too busy	.920	
Insurer - returned calls promptly	.920	
Insurer - felt safe to deal with	.915	
Insurer - relevant experience	.910	
Insurer - knowledge & competence	.908	
INSURER - fulfilled promises timely	.905	
Insurer - solutions were appropriate	.903	
INSURER - trustworthy	.900	
Insurer - prompt services	.897	
Insurer - stayed involved	.890	
Insurer - easy to contact insurer	.889	
Insurer - had my interests at heart	.887	
Insurer - were polite	.885	
Insurer - maintained records	.865	
INSURER - told when to expect services	.861	
Insurer - consistent point of contact	.762	
Insurer - vehicle appearance	.595	.393
INSURER - staff appearance		.875

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

ATTEMPT TO EXTRACT TWO FACTORS - INSURANCE SERVICE SCALE

Component Matrix[a]

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
Insurer - dependable	**.951**	
Insurer - sympathetic to problems	**.929**	
Insurer - willing to help me	**.927**	
Insurer - understood my needs	**.923**	
INSURER - fulfilled promises timely	**.922**	
Insurer - support for employees	**.917**	
Insurer - understood my problems	**.915**	
INSURER - personal attention	**.907**	
Insurer - returned calls promptly	**.906**	
Insurer - stayed involved	**.904**	
Insurer - felt safe to deal with	**.904**	
Insurer - relevant experience	**.902**	
Insurer - prompt services	**.900**	
Insurer - knowledge & competence	**.897**	
Insurer - never too busy	**.892**	
INSURER - told when to expect services	**.887**	
Insurer - maintained records	**.887**	
INSURER - trustworthy	**.887**	
Insurer - solutions were appropriate	**.874**	
Insurer - were polite	**.873**	
Insurer - had my interests at heart	**.863**	
Insurer - easy to contact insurer	**.861**	
Insurer - consistent point of contact	**.780**	
Insurer - vehicle appearance	**.529**	.478
INSURER - staff appearance		**.874**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

	Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %
1	18.771	75.085	75.085
2	1.597	6.387	81.472

Extraction Method: Principal Component Analysis.

Component Transformation Matrix

Component	1	2
1	.989	.151
2	-.151	.989

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

FACTOR ANALYSIS RESULTS – LOSS ADJUSTER SERVICE

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.956
Bartlett's Test of Sphericity	Approx. Chi-Square	3716.097
	df	351
	Sig.	.000

Communalities

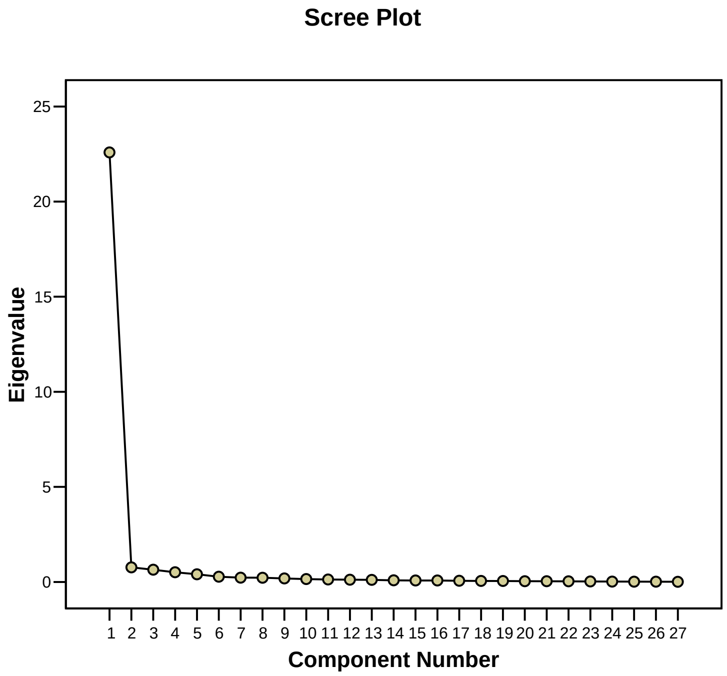
	Initial	Extraction
LADJ - staff appearance	1.000	.735
LAdj - vehicle appearance	1.000	.534
LAdj - solutions were appropriate	1.000	.874
LAdj - never too busy	1.000	.887
LAdj - easy to contact insurer	1.000	.879
LAdj - knowledge & competence	1.000	.915
LAdj - understood my problems	1.000	.906
LAdj - stayed involved	1.000	.875
LAdj - relevant experience	1.000	.889
LAdj - coordinated contractors & repairs	1.000	.717
LAdj - we had similar views on important issues	1.000	.834
LADJ - fulfilled promises timely	1.000	.849
LAdj - sympathetic to problems	1.000	.889
LAdj - dependable	1.000	.873
LAdj - maintained records	1.000	.748
LAdj - consistent point of contact	1.000	.717
LADJ - told when to expect services	1.000	.836
LAdj - returned calls promptly	1.000	.850
LAdj - prompt services	1.000	.884
LAdj - willing to help me	1.000	.898
LADJ - trustworthy	1.000	.885
LAdj - felt safe to deal with	1.000	.913
LAdj - were polite	1.000	.776
LAdj - support for employees	1.000	.702
LADJ - personal attention	1.000	.924
LAdj - understood my needs	1.000	.931
LAdj - had my interests at heart	1.000	.865

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	22.586	83.652	83.652	22.586	83.652	83.652
2	.771	2.854	86.506			
3	.645	2.389	88.895			
4	.512	1.898	90.794			
5	.407	1.507	92.301			
6	.279	1.033	93.334			
7	.229	.848	94.182			
8	.224	.830	95.011			
9	.188	.696	95.707			
10	.155	.574	96.280			
11	.132	.488	96.768			
12	.121	.449	97.217			
13	.111	.412	97.629			
14	.088	.327	97.956			
15	.080	.296	98.251			
16	.079	.292	98.543			
17	.064	.236	98.779			
18	.057	.212	98.992			
19	.052	.194	99.186			
20	.043	.158	99.344			
21	.041	.152	99.496			
22	.037	.137	99.633			
23	.029	.108	99.741			
24	.022	.083	99.825			
25	.019	.070	99.894			
26	.018	.066	99.960			
27	.011	.040	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component
	1
LAdj - understood my needs	.965
LADJ - personal attention	.961
LAdj - know ledge & competence	.957
LAdj - felt safe to deal w ith	.956
LAdj - understood my problems	.952
LAdj - w illing to help me	.948
LAdj - sympathetic to problems	.943
LAdj - relevant experience	.943
LAdj - never too busy	.942
LADJ - trustw orthy	.941
LAdj - prompt services	.940
LAdj - easy to contact insurer	.937
LAdj - stayed involved	.936
LAdj - solutions w ere appropriate	.935
LAdj - dependable	.934
LAdj - had my interests at heart	.930
LAdj - returned calls promptly	.922
LADJ - fulfilled promises timely	.921
LADJ - told w hen to expect services	.914
LAdj - w e had similar view s on important issues	.913
LAdj - w ere polite	.881
LAdj - maintained records	.865
LADJ - staff appearance	.857
LAdj - consistent point of contact	.847
LAdj - coordinated contractors & repairs	.847
LAdj - support for employees	.838
LAdj - vehicle appearance	.731

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

		LADJ - staff appearance	LAdj - vehicle appearance	LAdj - solutions were appropriate	LAdj - never too busy	LAdj - easy to contact insurer	LAdj - knowledge & competence	LAdj - understood my problems	LAdj - stayed involved	LAdj - relevant experience	LAdj - coordinated contractors & repairs	LAdj - we had similar views on important issues	LADJ - fulfilled promises timely	LAdj - sympathetic to problems	LAdj - dependable	LAdj - maintained records	LADJ - consistent point of contact	LADJ - told when to expect services	LAdj - returned calls promptly	LAdj - prompt services	LAdj - willing to help me	LADJ - trustworthy	LAdj - felt safe to deal with	LAdj - were polite	LAdj - support for employees	LADJ - personal attention	LAdj - understood my needs	LAdj - had my interests at heart
Correlation Matrix																												
Correlation	LADJ - staff appearance	1.000	0.791	0.819	0.790	0.789	0.814	0.786	0.817	0.833	0.652	0.757	0.769	0.790	0.817	0.763	0.689	0.747	0.784	0.764	0.769	0.816	0.801	0.811	0.622	0.825	0.812	0.747
	LAdj - vehicle appearanc	0.791	1.000	0.694	0.698	0.651	0.700	0.666	0.696	0.688	0.590	0.616	0.623	0.630	0.665	0.602	0.621	0.605	0.648	0.618	0.644	0.673	0.659	0.689	0.630	0.698	0.650	0.689
	LAdj - solutions were ap	0.819	0.694	1.000	0.912	0.865	0.894	0.897	0.881	0.890	0.765	0.871	0.855	0.898	0.856	0.740	0.737	0.833	0.840	0.852	0.862	0.899	0.906	0.813	0.748	0.917	0.927	0.867
	LAdj - never too busy	0.790	0.698	0.912	1.000	0.929	0.919	0.904	0.886	0.886	0.819	0.865	0.855	0.874	0.876	0.767	0.767	0.830	0.852	0.855	0.888	0.870	0.915	0.784	0.804	0.889	0.913	0.861
	LAdj - easy to contact in	0.789	0.651	0.865	0.929	1.000	0.922	0.923	0.895	0.880	0.763	0.897	0.843	0.914	0.867	0.771	0.773	0.813	0.860	0.851	0.886	0.838	0.881	0.787	0.777	0.907	0.918	0.890
	LAdj - knowledge & com	0.814	0.700	0.894	0.919	0.922	1.000	0.937	0.876	0.898	0.814	0.867	0.854	0.888	0.884	0.819	0.785	0.863	0.882	0.863	0.903	0.884	0.908	0.864	0.821	0.907	0.924	0.894
	LAdj - understood my pr	0.786	0.666	0.897	0.904	0.923	0.937	1.000	0.893	0.895	0.791	0.926	0.852	0.950	0.882	0.768	0.761	0.822	0.839	0.857	0.896	0.882	0.887	0.824	0.787	0.937	0.952	0.930
	LAdj - stayed involved	0.817	0.696	0.881	0.886	0.895	0.876	0.893	1.000	0.941	0.770	0.872	0.853	0.906	0.845	0.759	0.807	0.831	0.835	0.866	0.869	0.847	0.879	0.801	0.741	0.920	0.902	0.870
	LAdj - relevant experien	0.833	0.688	0.890	0.886	0.880	0.898	0.895	0.941	1.000	0.756	0.885	0.864	0.917	0.871	0.797	0.803	0.837	0.839	0.867	0.860	0.873	0.890	0.835	0.739	0.927	0.914	0.851
	LAdj - coordinated contr	0.652	0.590	0.765	0.819	0.763	0.814	0.791	0.770	0.756	1.000	0.752	0.847	0.744	0.738	0.787	0.781	0.842	0.711	0.845	0.751	0.773	0.800	0.744	0.746	0.760	0.793	0.778
	LAdj - we had similar vie	0.757	0.616	0.871	0.865	0.897	0.867	0.926	0.872	0.885	0.752	1.000	0.834	0.929	0.825	0.730	0.740	0.784	0.780	0.824	0.838	0.832	0.848	0.771	0.714	0.921	0.913	0.897
	LADJ - fulfilled promises	0.769	0.623	0.855	0.855	0.843	0.854	0.852	0.853	0.864	0.847	0.834	1.000	0.853	0.853	0.864	0.836	0.891	0.819	0.945	0.839	0.857	0.855	0.795	0.722	0.873	0.868	0.801
	LAdj - sympathetic to pr	0.790	0.630	0.898	0.874	0.914	0.888	0.950	0.906	0.917	0.744	0.929	0.853	1.000	0.875	0.752	0.757	0.818	0.830	0.868	0.885	0.883	0.896	0.800	0.749	0.953	0.944	0.911
	LAdj - dependable	0.817	0.665	0.856	0.876	0.867	0.884	0.882	0.845	0.871	0.738	0.825	0.853	0.875	1.000	0.838	0.730	0.840	0.929	0.861	0.924	0.904	0.892	0.827	0.819	0.877	0.894	0.842
	LAdj - maintained recor	0.763	0.602	0.740	0.767	0.771	0.819	0.768	0.759	0.797	0.787	0.730	0.864	0.752	0.838	1.000	0.834	0.875	0.818	0.878	0.813	0.801	0.812	0.759	0.737	0.768	0.782	0.730
	LAdj - consistent point o	0.689	0.621	0.737	0.767	0.773	0.785	0.761	0.807	0.803	0.781	0.740	0.836	0.757	0.730	0.834	1.000	0.856	0.759	0.875	0.772	0.766	0.786	0.721	0.694	0.783	0.756	0.734
	LADJ - told when to exp	0.747	0.605	0.833	0.830	0.813	0.863	0.822	0.831	0.837	0.842	0.784	0.891	0.818	0.840	0.875	0.856	1.000	0.864	0.939	0.876	0.842	0.866	0.780	0.761	0.848	0.873	0.810
	LAdj - returned calls pro	0.784	0.648	0.840	0.852	0.860	0.882	0.839	0.835	0.839	0.711	0.780	0.819	0.830	0.929	0.818	0.759	0.864	1.000	0.875	0.939	0.886	0.899	0.825	0.819	0.869	0.878	0.842
	LAdj - prompt services	0.764	0.618	0.852	0.855	0.851	0.863	0.857	0.866	0.867	0.845	0.824	0.945	0.868	0.861	0.878	0.875	0.939	0.875	1.000	0.896	0.886	0.901	0.798	0.762	0.895	0.884	0.853
	LAdj - willing to help me	0.769	0.644	0.862	0.888	0.886	0.903	0.896	0.869	0.860	0.751	0.838	0.839	0.885	0.924	0.813	0.772	0.876	0.939	0.896	1.000	0.909	0.946	0.811	0.855	0.898	0.924	0.899
	LADJ - trustworthy	0.816	0.673	0.899	0.870	0.838	0.884	0.882	0.847	0.873	0.773	0.832	0.857	0.883	0.904	0.801	0.766	0.842	0.886	0.886	0.909	1.000	0.941	0.845	0.782	0.924	0.914	0.865
	LAdj - felt safe to deal w	0.801	0.659	0.906	0.915	0.881	0.908	0.887	0.879	0.890	0.800	0.848	0.855	0.896	0.892	0.812	0.786	0.866	0.899	0.901	0.946	0.941	1.000	0.842	0.811	0.910	0.933	0.879
	LAdj - were polite	0.811	0.689	0.813	0.784	0.787	0.864	0.824	0.801	0.835	0.744	0.771	0.795	0.800	0.827	0.759	0.721	0.780	0.825	0.798	0.811	0.845	0.842	1.000	0.731	0.838	0.827	0.816
	LAdj - support for emplo	0.622	0.630	0.748	0.804	0.777	0.821	0.787	0.741	0.739	0.746	0.714	0.722	0.749	0.819	0.737	0.694	0.761	0.819	0.762	0.855	0.782	0.811	0.731	1.000	0.737	0.778	0.799
	LADJ - personal attentio	0.825	0.698	0.917	0.889	0.907	0.907	0.937	0.920	0.927	0.760	0.921	0.873	0.953	0.877	0.768	0.783	0.848	0.869	0.895	0.898	0.924	0.910	0.838	0.737	1.000	0.958	0.932
	LAdj - understood my ne	0.812	0.650	0.927	0.913	0.918	0.924	0.952	0.902	0.914	0.793	0.913	0.868	0.944	0.894	0.782	0.756	0.873	0.878	0.884	0.924	0.914	0.933	0.827	0.778	0.958	1.000	0.926
	LAdj - had my interests a	0.747	0.689	0.867	0.861	0.890	0.894	0.930	0.870	0.851	0.778	0.897	0.801	0.911	0.842	0.730	0.734	0.810	0.842	0.853	0.899	0.865	0.879	0.816	0.799	0.932	0.926	1.000
	Min	**0.622**	**0.590**	**0.737**	**0.767**	**0.763**	**0.785**	**0.761**	**0.741**	**0.739**	**0.711**	**0.714**	**0.722**	**0.749**	**0.730**	**0.730**	**0.694**	**0.761**	**0.819**	**0.762**	**0.811**	**0.782**	**0.811**	**0.731**	**0.737**	**0.932**	**0.926**	**1.000**
	Max	**0.833**	**0.700**	**0.927**	**0.929**	**0.923**	**0.937**	**0.952**	**0.941**	**0.927**	**0.847**	**0.929**	**0.945**	**0.953**	**0.929**	**0.878**	**0.875**	**0.939**	**0.939**	**0.901**	**0.946**	**0.941**	**0.933**	**0.838**	**0.799**	**0.958**	**0.926**	**1.000**
	Avergae	0.776	0.654	0.855	0.861	0.857	0.873	0.867	0.848	0.851	0.776	0.824	0.845	0.852	0.860	0.801	0.773	0.846	0.870	0.859	0.892	0.879	0.875	0.803	0.771	0.945	0.926	1.000

FACTOR ANALYSIS RESULTS – CONTRACTOR'S SERVICE

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.959
Bartlett's Test of Sphericity	Approx. Chi-Square	5515.897
	df	528
	Sig.	.000

Communalities

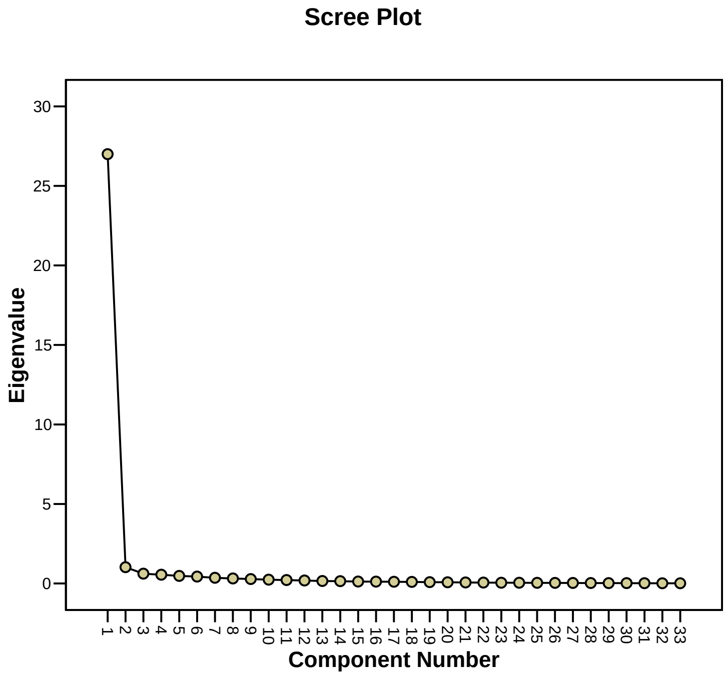
	Initial	Extraction
KTOR - staff appearance	1.000	.777
Ktor - vehicle appearance	1.000	.690
Ktor - solutions were appropriate	1.000	.894
Ktor - never too busy	1.000	.871
Ktor - easy to contact contractor	1.000	.863
Ktor - knowledge & competence	1.000	.900
Ktor - understood my problems	1.000	.893
Ktor - relevant experience	1.000	.818
Ktor - good level of supervision	1.000	.872
Ktor - we had similar views on important issues	1.000	.877
Ktor - up-to-date equipment and tools	1.000	.855
Ktor - good quality of repair works	1.000	.838
Ktor - kept property tidy	1.000	.850
Ktor - protection to existing structure and contents	1.000	.796
Ktor - size of contractor's org.	1.000	.752
KTOR - fulfilled promises timely	1.000	.889
Ktor - sympathetic to problems	1.000	.921
Ktor - dependable	1.000	.899
Ktor - maintained records	1.000	.796
Ktor - did work in timely manner	1.000	.834
Ktor - consistent point of contact	1.000	.726
KTOR - told when to expect services	1.000	.815
Ktor - returned calls promptly	1.000	.883
Ktor - prompt services	1.000	.908
Ktor - willing to help me	1.000	.909
KTOR - trustworthy	1.000	.832
Ktor - felt safe to deal with	1.000	.871
Ktor - were polite	1.000	.803
Ktor - support for employees	1.000	.857
KTOR - personal attention	1.000	.891
Ktor - understood my needs	1.000	.912
Ktor - came to work at convinient times	1.000	.817
Ktor - had my interests at heart	1.000	.910

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	26.997	81.809	81.809	26.997	81.809	81.809
2	1.023	3.101	84.910	1.023	3.101	84.910
3	.617	1.870	86.779			
4	.551	1.670	88.449			
5	.476	1.443	89.892			
6	.433	1.311	91.203			
7	.357	1.081	92.284			
8	.314	.950	93.234			
9	.279	.846	94.080			
10	.238	.720	94.800			
11	.215	.652	95.452			
12	.187	.566	96.018			
13	.153	.464	96.482			
14	.142	.431	96.913			
15	.121	.366	97.280			
16	.114	.346	97.626			
17	.106	.322	97.948			
18	.096	.291	98.239			
19	.082	.250	98.489			
20	.075	.228	98.717			
21	.062	.188	98.905			
22	.053	.162	99.067			
23	.047	.144	99.210			
24	.044	.134	99.344			
25	.040	.121	99.465			
26	.036	.108	99.573			
27	.031	.095	99.667			
28	.027	.082	99.750			
29	.023	.071	99.820			
30	.020	.062	99.882			
31	.016	.049	99.931			
32	.012	.036	99.968			
33	.011	.032	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component	
	1	2
Ktor - understood my needs	.949	
Ktor - understood my problems	.939	
KTOR - personal attention	.939	
Ktor - had my interests at heart	.937	
KTOR - fulfilled promises timely	.937	
Ktor - dependable	.934	
Ktor - willing to help me	.933	
Ktor - sympathetic to problems	.932	
Ktor - prompt services	.931	
Ktor - good level of supervision	.930	
Ktor - felt safe to deal with	.929	
Ktor - solutions were appropriate	.928	
Ktor - know ledge & competence	.925	
Ktor - never too busy	.923	
Ktor - we had similar views on important issues	.917	
Ktor - returned calls promptly	.915	
Ktor - did work in timely manner	.909	
Ktor - up-to-date equipment and tools	.906	
KTOR - trustworthy	.906	
Ktor - good quality of repair works	.906	
Ktor - easy to contact contractor	.905	
Ktor - relevant experience	.904	
Ktor - came to work at convinient times	.900	
Ktor - support for employees	.898	
KTOR - told when to expect services	.897	
Ktor - kept property tidy	.897	
Ktor - were polite	.888	
Ktor - maintained records	.887	
Ktor - protection to existing structure and contents	.873	
Ktor - size of contractor's org.	.843	
KTOR - staff appearance	.829	.300
Ktor - consistent point of contact	.791	-.315
Ktor - vehicle appearance	.780	

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Correlation Matrix

		KTOR - staff appearance	Ktor - vehicle appearance	Ktor - solutions were appropriate	Ktor - never too busy	Ktor - easy to contact contractor	Ktor - knowledge & competence	Ktor - understood my problems	Ktor - relevant experience	Ktor - good level of supervision	Ktor - we had similar views on important issues	Ktor - up-to-date equipment and tools	Ktor - good quality of repair works	Ktor - kept property tidy	Ktor - protection to existing structure and contents	Ktor - size of contractor's org.	KTOR - fulfilled promises timely	Ktor - sympathetic to problems	Ktor - dependable	Ktor - maintained records	Ktor - did work in timely manner	Ktor - consistent point of contact	KTOR - told when to expect services	Ktor - returned calls promptly	Ktor - prompt services	Ktor - willing to help me	KTOR - trustworthy	Ktor - felt safe to deal with	Ktor - were polite	Ktor - support for employees	KTOR - personal attention	Ktor - understood my needs	Ktor - came to work at convinient times	Ktor - had my interests at heart
Correlation	KTOR - staff appearar	1.000	0.815	0.829	0.774	0.727	0.727	0.786	0.763	0.795	0.706	0.790	0.738	0.789	0.732	0.674	0.766	0.719	0.714	0.765	0.734	0.577	0.739	0.684	0.708	0.734	0.775	0.767	0.766	0.698	0.773	0.784	0.708	0.708
	Ktor - vehicle appeara	0.815	1.000	0.790	0.702	0.684	0.675	0.735	0.706	0.739	0.697	0.783	0.693	0.718	0.662	0.657	0.728	0.678	0.680	0.713	0.720	0.567	0.714	0.657	0.691	0.683	0.668	0.675	0.680	0.634	0.717	0.726	0.699	0.656
	Ktor - solutions were a	0.829	0.790	1.000	0.836	0.842	0.854	0.881	0.847	0.882	0.832	0.860	0.888	0.880	0.861	0.731	0.871	0.807	0.845	0.813	0.840	0.690	0.818	0.817	0.822	0.823	0.866	0.886	0.819	0.759	0.861	0.874	0.816	0.830
	Ktor - never too busy	0.774	0.702	0.836	1.000	0.890	0.866	0.849	0.793	0.847	0.862	0.824	0.805	0.828	0.817	0.824	0.862	0.899	0.889	0.761	0.811	0.748	0.793	0.878	0.896	0.883	0.789	0.807	0.780	0.850	0.837	0.825	0.810	0.884
	Ktor - easy to contact	0.727	0.684	0.842	0.890	1.000	0.905	0.817	0.810	0.841	0.864	0.779	0.794	0.788	0.762	0.811	0.812	0.863	0.856	0.763	0.786	0.786	0.775	0.906	0.877	0.849	0.797	0.806	0.781	0.826	0.792	0.797	0.755	0.866
	Ktor - knowledge & co	0.727	0.675	0.854	0.866	0.905	1.000	0.879	0.893	0.871	0.911	0.795	0.852	0.793	0.759	0.811	0.814	0.912	0.895	0.805	0.784	0.792	0.751	0.866	0.873	0.900	0.793	0.821	0.786	0.870	0.826	0.841	0.764	0.884
	Ktor - understood my p	0.786	0.735	0.881	0.849	0.817	0.879	1.000	0.907	0.893	0.889	0.884	0.871	0.836	0.815	0.729	0.878	0.846	0.884	0.830	0.835	0.714	0.838	0.807	0.807	0.855	0.838	0.870	0.838	0.793	0.938	0.931	0.861	0.862
	Ktor - relevant experie	0.763	0.706	0.847	0.793	0.810	0.893	0.907	1.000	0.896	0.812	0.832	0.872	0.779	0.752	0.743	0.826	0.826	0.813	0.817	0.809	0.759	0.775	0.804	0.800	0.809	0.799	0.834	0.824	0.777	0.843	0.847	0.777	0.806
	Ktor - good level of su	0.795	0.739	0.882	0.847	0.841	0.871	0.893	0.896	1.000	0.851	0.832	0.889	0.879	0.834	0.784	0.898	0.840	0.821	0.832	0.879	0.739	0.812	0.814	0.851	0.788	0.801	0.829	0.774	0.785	0.849	0.869	0.852	0.865
	Ktor - we had similar v	0.706	0.697	0.832	0.862	0.864	0.911	0.889	0.812	0.851	1.000	0.803	0.812	0.766	0.749	0.769	0.798	0.886	0.912	0.793	0.775	0.769	0.770	0.844	0.857	0.899	0.793	0.812	0.738	0.858	0.879	0.879	0.831	0.918
	Ktor - up-to-date equip	0.790	0.783	0.860	0.824	0.779	0.795	0.884	0.832	0.832	0.803	1.000	0.843	0.848	0.806	0.772	0.850	0.788	0.826	0.820	0.797	0.683	0.807	0.785	0.775	0.832	0.829	0.849	0.846	0.785	0.865	0.865	0.812	0.782
	Ktor - good quality of r	0.738	0.693	0.888	0.805	0.794	0.852	0.871	0.872	0.889	0.812	0.843	1.000	0.892	0.847	0.732	0.857	0.793	0.832	0.802	0.821	0.661	0.782	0.816	0.809	0.787	0.801	0.837	0.782	0.788	0.830	0.862	0.801	0.814
	Ktor - kept property tid	0.789	0.718	0.880	0.828	0.788	0.793	0.836	0.779	0.879	0.766	0.848	0.892	1.000	0.905	0.760	0.868	0.787	0.785	0.788	0.828	0.640	0.779	0.771	0.799	0.781	0.804	0.840	0.811	0.754	0.808	0.836	0.810	0.816
	Ktor - protection to exi	0.732	0.662	0.861	0.817	0.762	0.759	0.815	0.752	0.834	0.749	0.806	0.847	0.905	1.000	0.699	0.861	0.789	0.781	0.754	0.802	0.638	0.778	0.758	0.777	0.769	0.784	0.812	0.766	0.747	0.822	0.828	0.797	0.783
	Ktor - size of contracto	0.674	0.657	0.731	0.824	0.811	0.811	0.729	0.743	0.784	0.769	0.772	0.732	0.760	0.699	1.000	0.794	0.844	0.793	0.694	0.752	0.726	0.713	0.785	0.836	0.808	0.718	0.720	0.736	0.778	0.708	0.752	0.725	0.791
	KTOR - fulfilled promis	0.766	0.728	0.871	0.862	0.812	0.814	0.878	0.826	0.898	0.798	0.850	0.857	0.868	0.861	0.794	1.000	0.878	0.860	0.821	0.925	0.683	0.875	0.825	0.881	0.830	0.838	0.861	0.810	0.808	0.892	0.902	0.889	0.871
	Ktor - sympathetic to p	0.719	0.678	0.807	0.899	0.863	0.912	0.846	0.826	0.840	0.886	0.788	0.793	0.787	0.789	0.844	0.878	1.000	0.927	0.815	0.828	0.774	0.814	0.884	0.912	0.925	0.787	0.827	0.794	0.892	0.867	0.861	0.829	0.899
	Ktor - dependable	0.714	0.680	0.845	0.889	0.856	0.895	0.884	0.813	0.821	0.912	0.826	0.832	0.785	0.781	0.793	0.860	0.927	1.000	0.814	0.809	0.747	0.818	0.890	0.882	0.906	0.826	0.849	0.793	0.863	0.893	0.895	0.838	0.905
	Ktor - maintained reco	0.765	0.713	0.813	0.761	0.763	0.805	0.830	0.817	0.832	0.793	0.820	0.802	0.788	0.754	0.694	0.821	0.815	0.814	1.000	0.810	0.670	0.846	0.788	0.800	0.831	0.816	0.845	0.780	0.824	0.838	0.848	0.779	0.781
	Ktor - did work in timel	0.734	0.720	0.840	0.811	0.786	0.784	0.835	0.809	0.879	0.775	0.797	0.821	0.828	0.802	0.752	0.925	0.828	0.809	0.810	1.000	0.701	0.865	0.823	0.882	0.805	0.809	0.831	0.799	0.776	0.851	0.877	0.875	0.867
	Ktor - consistent point	0.577	0.567	0.690	0.748	0.786	0.792	0.714	0.759	0.739	0.769	0.683	0.661	0.640	0.638	0.726	0.683	0.774	0.747	0.670	0.701	1.000	0.628	0.743	0.749	0.782	0.703	0.731	0.705	0.724	0.703	0.694	0.637	0.770
	KTOR - told when to e	0.739	0.714	0.818	0.793	0.775	0.751	0.838	0.775	0.812	0.770	0.807	0.782	0.779	0.778	0.713	0.875	0.814	0.818	0.846	0.865	0.628	1.000	0.854	0.877	0.826	0.826	0.836	0.817	0.812	0.871	0.873	0.844	0.828
	Ktor - returned calls pr	0.684	0.657	0.817	0.878	0.906	0.866	0.807	0.804	0.814	0.844	0.785	0.816	0.771	0.758	0.785	0.825	0.884	0.890	0.788	0.823	0.743	0.854	1.000	0.943	0.875	0.807	0.843	0.786	0.862	0.812	0.824	0.827	0.889
	Ktor - prompt services	0.708	0.691	0.822	0.896	0.877	0.873	0.807	0.800	0.851	0.857	0.775	0.809	0.799	0.777	0.836	0.881	0.912	0.882	0.800	0.882	0.749	0.877	0.943	1.000	0.896	0.805	0.832	0.780	0.882	0.831	0.846	0.851	0.928
	Ktor - willing to help m	0.734	0.683	0.823	0.883	0.849	0.900	0.855	0.809	0.788	0.899	0.832	0.787	0.781	0.769	0.808	0.830	0.925	0.906	0.831	0.805	0.782	0.826	0.875	0.896	1.000	0.858	0.875	0.843	0.926	0.877	0.881	0.791	0.899
	KTOR - trustworthy	0.775	0.668	0.866	0.789	0.797	0.793	0.838	0.799	0.801	0.793	0.829	0.801	0.804	0.784	0.718	0.838	0.787	0.826	0.816	0.809	0.703	0.826	0.807	0.805	0.858	1.000	0.967	0.903	0.815	0.872	0.895	0.796	0.832
	Ktor - felt safe to deal	0.767	0.675	0.886	0.807	0.806	0.821	0.870	0.834	0.829	0.812	0.849	0.837	0.840	0.812	0.720	0.861	0.827	0.849	0.845	0.831	0.731	0.836	0.843	0.832	0.875	0.967	1.000	0.907	0.829	0.897	0.902	0.831	0.856
	Ktor - were polite	0.766	0.680	0.819	0.780	0.781	0.786	0.838	0.824	0.774	0.738	0.846	0.782	0.811	0.766	0.736	0.810	0.794	0.793	0.780	0.799	0.705	0.817	0.786	0.780	0.843	0.903	0.907	1.000	0.789	0.855	0.864	0.761	0.786
	Ktor - support for emp	0.698	0.634	0.759	0.850	0.826	0.870	0.793	0.777	0.785	0.858	0.785	0.788	0.754	0.747	0.778	0.808	0.892	0.863	0.824	0.776	0.724	0.812	0.862	0.882	0.926	0.815	0.829	0.789	1.000	0.824	0.827	0.747	0.876
	KTOR - personal atter	0.773	0.717	0.861	0.837	0.792	0.826	0.938	0.843	0.849	0.879	0.865	0.830	0.808	0.822	0.708	0.892	0.867	0.893	0.838	0.851	0.703	0.871	0.812	0.831	0.877	0.872	0.897	0.855	0.824	1.000	0.969	0.895	0.883
	Ktor - understood my r	0.784	0.726	0.874	0.825	0.797	0.841	0.931	0.847	0.869	0.879	0.865	0.862	0.836	0.828	0.752	0.902	0.861	0.895	0.848	0.877	0.694	0.873	0.824	0.846	0.881	0.895	0.902	0.864	0.827	0.969	1.000	0.910	0.898
	Ktor - came to work at	0.708	0.699	0.816	0.810	0.755	0.764	0.861	0.777	0.852	0.831	0.812	0.801	0.810	0.797	0.725	0.889	0.829	0.838	0.779	0.875	0.637	0.844	0.827	0.851	0.791	0.796	0.831	0.761	0.747	0.895	0.910	1.000	0.888
	Ktor - had my interests	0.708	0.656	0.830	0.884	0.866	0.884	0.862	0.806	0.865	0.918	0.782	0.814	0.816	0.783	0.791	0.871	0.899	0.905	0.781	0.867	0.770	0.828	0.889	0.928	0.899	0.832	0.856	0.786	0.876	0.883	0.898	0.888	1.000
	Min	**0.577**	**0.567**	**0.690**	**0.748**	**0.755**	**0.751**	**0.714**	**0.743**	**0.739**	**0.738**	**0.683**	**0.661**	**0.640**	**0.638**	**0.694**	**0.683**	**0.774**	**0.747**	**0.670**	**0.701**	**0.628**	**0.812**	**0.786**	**0.780**	**0.791**	**0.796**	**0.829**	**0.761**	**0.747**	**0.883**	**0.898**	**0.888**	**1.000**
	Max	**0.829**	**0.790**	**0.888**	**0.899**	**0.906**	**0.912**	**0.938**	**0.896**	**0.898**	**0.918**	**0.865**	**0.892**	**0.905**	**0.861**	**0.844**	**0.925**	**0.927**	**0.906**	**0.848**	**0.882**	**0.782**	**0.877**	**0.943**	**0.928**	**0.926**	**0.967**	**0.907**	**0.864**	**0.876**	**0.969**	**0.910**	**0.888**	**1.000**
	Avergae	0.743	0.694	0.835	0.835	0.817	0.835	0.848	0.809	0.832	0.822	0.812	0.807	0.799	0.776	0.760	0.850	0.852	0.849	0.804	0.828	0.714	0.842	0.847	0.850	0.869	0.869	0.870	0.811	0.819	0.916	0.904	0.888	1.000

ATTEMPT TO EXTRACT TWO FACTORS - CONTRACTOR SERVICE SCALE

Component Matrix[a]

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
KTOR - staff appearance	.804	.361
Ktor - solutions were appropriate	.795	.513
Ktor - kept property tidy	.792	.472
Ktor - up-to-date equipment and tools	.778	.500
Ktor - vehicle appearance	.758	.339
Ktor - understood my needs	.757	.582
Ktor - protection to existing structure and contents	.755	.476
Ktor - understood my problems	.748	.578
KTOR - fulfilled promises timely	.747	.575
Ktor - good quality of repair works	.743	.535
KTOR - personal attention	.741	.585
Ktor - felt safe to deal with	.731	.580
Ktor - good level of supervision	.728	.585
KTOR - trustworthy	.724	.554
Ktor - were polite	.719	.534
Ktor - did work in timely manner	.715	.568
KTOR - told when to expect services	.712	.555
Ktor - came to work at convinient times	.709	.561
Ktor - maintained records	.705	.547
Ktor - relevant experience	.679	.598
Ktor - sympathetic to problems	.512	.811
Ktor - knowledge & competence	.517	.795
Ktor - prompt services	.529	.792
Ktor - returned calls promptly	.508	.791
Ktor - willing to help me	.535	.789
Ktor - support for employees	.490	.786
Ktor - had my interests at heart	.549	.780
Ktor - easy to contact contractor	.506	.779
Ktor - consistent point of contact	.349	.777
Ktor - we had similar views on important issues	.527	.774
Ktor - dependable	.559	.766
Ktor - never too busy	.566	.742
Ktor - size of contractor's org.	.464	.733

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	14.432	43.734	43.734
2	13.588	41.176	84.910

Extraction Method: Principal Component Analysis.

Component Transformation Matrix

Component	1	2
1	.719	.696
2	.696	-.719

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

M. HYPOTHESIS 2 (H_2) ANALYSIS OUTPUT

Regression for oSAT_Insurer

Descriptive Statistics[a]

	Mean	Std. Deviation	N
oSAT_Insurer	4.27	1.624	106
INSURER - staff appearance	1.34	2.079	83
Insurer - vehicle appearance	3.98	1.208	62
Insurer - solutions were appropriate	3.89	1.725	99
Insurer - never too busy	3.85	1.682	101
Insurer - easy to contact insurer	3.74	1.732	105
Insurer - knowledge & competence	3.87	1.713	103
Insurer - understood my problems	3.91	1.710	105
Insurer - stayed involved	3.80	1.814	104
Insurer - relevant experience	3.90	1.668	102
INSURER - fulfilled promises timely	3.80	1.653	103
Insurer - sympathetic to problems	3.88	1.661	102
Insurer - dependable	3.93	1.637	102
Insurer - maintained records	3.93	1.649	102
Insurer - consistent point of contact	3.46	1.768	90
INSURER - told when to expect services	3.85	1.805	97
Insurer - returned calls promptly	3.79	1.761	104
Insurer - prompt services	3.98	1.759	105
Insurer - willing to help me	3.98	1.771	103
INSURER - trustworthy	4.34	1.556	104
Insurer - felt safe to deal with	4.26	1.558	104
Insurer - were polite	4.39	1.503	106
Insurer - support for employees	4.07	1.690	87
INSURER - personal attention	3.84	1.733	102
Insurer - understood my needs	3.90	1.626	102
Insurer - had my interests at heart	4.05	1.779	103

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	INSURER - trustworthy	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Insurer - stayed involved	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: oSAT_Insurer

b. Models are based only on cases for which "HoldOut Sample Excluded" = Yes

Model Summary[c,d]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.870[a]		.758	.753	.807
2	.914[b]	.968	**.835**	.828	.673

a. Predictors: (Constant), INSURER - trustworthy

b. Predictors: (Constant), INSURER - trustworthy, Insurer - stayed involved

c. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

d. Dependent Variable: oSAT_Insurer

ANOVA[c,d]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111.969	1	111.969	172.022	.000[a]
	Residual	35.799	55	.651		
	Total	147.769	56			
2	Regression	123.318	**2**	61.659	**136.174**	.000[b]
	Residual	24.451	**54**	.453		
	Total	147.769	56			

a. Predictors: (Constant), INSURER - trustworthy

b. Predictors: (Constant), INSURER - trustworthy, Insurer - stayed involved

c. Dependent Variable: oSAT_Insurer

d. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.332	.319		1.039	.303	-.308	.971					
	INSURER - trustworthy	.909	.069	.870	13.116	.000	.770	1.048	.870	.870	.870	1.000	1.000
2	(Constant)	.296	.266		1.111	.272	-.238	.829					
	INSURER - trustworthy	.598	.085	**.573**	7.055	.000	.428	.768	.870	.693	**.391**	.465	**2.152**
	Insurer - stayed involved	.364	.073	**.407**	5.006	.000	.218	.510	.826	.563	**.277**	.465	**2.152**

a. Dependent Variable: oSAT_Insurer

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Collinearity Diagnostics[a,b]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	INSURER - trustworthy	Insurer - stayed involved
1	1	1.942	1.000	.03	.03	
	2	.058	5.798	.97	.97	
2	1	2.869	1.000	.01	.01	.01
	2	.097	5.433	.66	.01	.36
	3	.034	9.156	.33	.99	.63

a. Dependent Variable: oSAT_Insurer

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Casewise Diagnostics[a]

Case Number	Std. Residual	oSAT_Insurer	Predicted Value	Residual
36	-3.107	0	2.09	-2.091
100	-4.731	0	3.18	-3.183

a. Dependent Variable: oSAT_Insurer

Residuals Statistics[a,b]

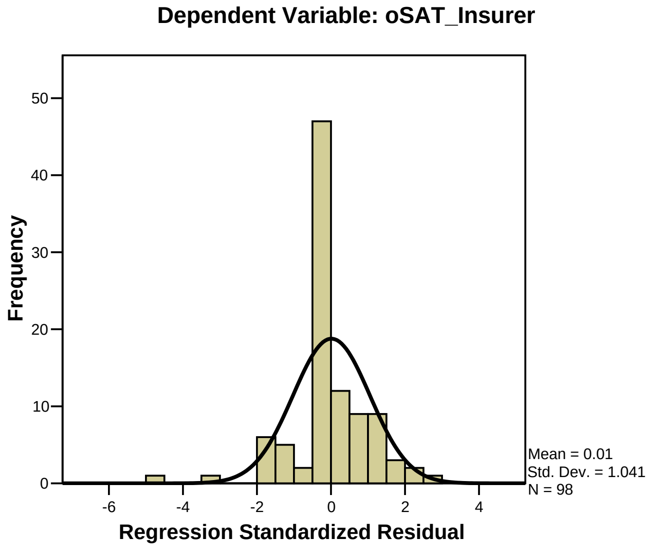
	"HoldOut Sample Excluded" = Yes (Selected)					"HoldOut Sample Excluded" ~= Yes (Unselected)				
	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.30	6.07	4.28	1.501	100	.30	6.07	4.23	1.968	7
Residual	-3.183	1.817	.009	.701	98	-.296	1.218	.054	.519	7
Std. Predicted Value	-2.681	1.211	.001	1.012	100	-2.681	1.211	-.029	1.326	7
Std. Residual	-4.731	2.700	.013	1.041	98	-.439	1.811	.081	.771	7

a. Dependent Variable: oSAT_Insurer

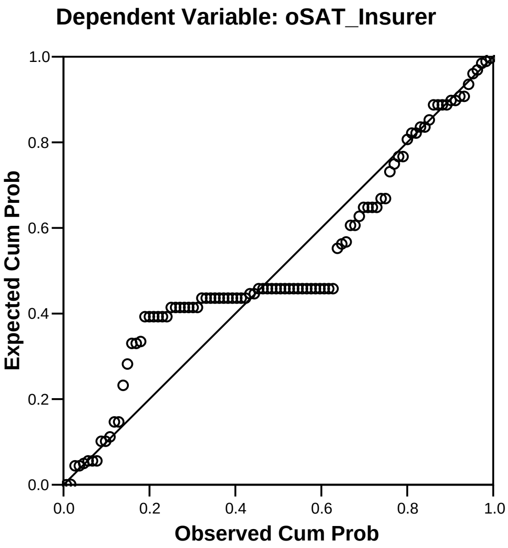
b. Pooled Cases

Charts

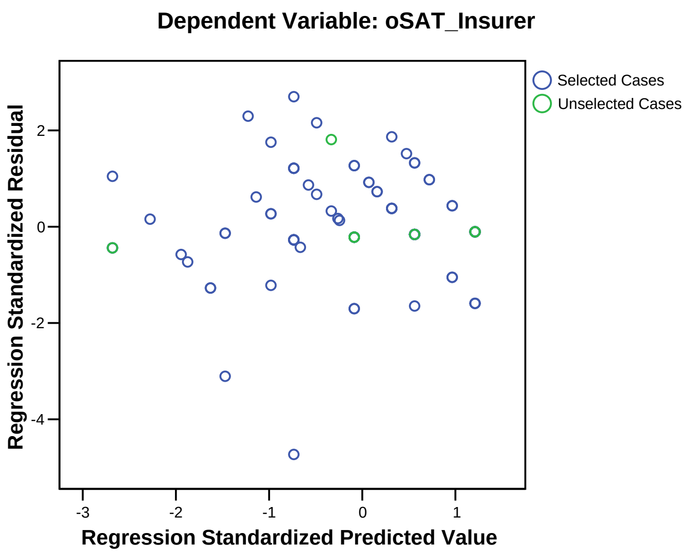
Histogram of Selected Cases



Normal P-P Plot of Standardized Residual for Selected Cases



Scatterplot



Regression for oSAT_Loss Adjuster

Descriptive Statistics[a]

	Mean	Std. Deviation	N
oSAT_Loss Adjuster	4.20	1.657	104
LADJ - staff appearance	4.31	1.398	101
LAdj - vehicle appearance	4.08	1.376	80
LAdj - solutions w ere appropriate	4.04	1.787	103
LAdj - never too busy	3.81	1.804	103
LAdj - easy to contact insurer	3.71	1.919	104
LAdj - know ledge & competence	4.02	1.695	104
LAdj - understood my problems	4.01	1.825	104
LAdj - stayed involved	4.01	1.886	103
LAdj - relevant experience	4.14	1.668	101
LAdj - coordinated contractors & repairs	3.79	1.907	95
LAdj - w e had similar view s on important issues	3.97	1.930	99
LADJ - fulfilled promises timely	3.94	1.830	103
LAdj - sympathetic to problems	4.01	1.914	99
LAdj - dependable	4.05	1.708	100
LAdj - maintained records	3.98	1.903	96
LAdj - consistent point of contact	3.67	2.000	91
Prompt Services as Promised	3.9038	1.81963	104
LAdj - returned calls promptly	3.84	1.876	102
LAdj - w illing to help me	3.98	1.903	101
LADJ - trustw orthy	4.14	1.726	104
LAdj - felt safe to deal w ith	4.07	1.833	100
LAdj - w ere polite	4.39	1.516	103
LAdj - support for employees	4.21	1.691	85
LADJ - personal attention	3.96	1.930	103
LAdj - understood my needs	4.05	1.854	103
LAdj - had my interests at heart	3.97	1.937	102

a. Selecting only cases for w hich "HoldOut Sample Excluded" = Yes

Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	Prompt Services as Promised	.	Stepw ise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	LADJ - personal attention	.	Stepw ise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	LAdj - maintained records	.	Stepw ise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: oSAT_Loss Adjuster

b. Models are based only on cases for w hich "HoldOut Sample Excluded" = Yes

Model Summary[d,e]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921[a]		.848	.846	.651
2	.944[b]		.891	.888	.554
3	.948[c]	1.000	**.899**	.894	.538

a. Predictors: (Constant), Prompt Services as Promised

b. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention

c. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention, LAdj - maintained records

d. Unless noted otherw ise, statistics are based only on cases for w hich "HoldOut Sample Excluded" = Yes.

e. Dependent Variable: oSAT_Loss Adjuster

ANOVA[d,e]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	158.308	1	158.308	373.895	.000[a]
	Residual	28.368	67	.423		
	Total	186.676	68			
2	Regression	166.409	2	83.204	270.953	.000[b]
	Residual	20.267	66	.307		
	Total	186.676	68			
3	Regression	167.841	3	55.947	193.076	.000[c]
	Residual	18.835	65	.290		
	Total	186.676	68			

a. Predictors: (Constant), Prompt Services as Promised

b. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention

c. Predictors: (Constant), Prompt Services as Promised, LADJ - personal attention, LAdj - maintained records

d. Dependent Variable: oSAT_Loss Adjuster

e. Selecting only cases for w hich "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.928	.187		4.977	.000	.556	1.301					
	Prompt Services as Promised	.839	.043	.921	19.336	.000	.752	.925	.921	.921	.921	1.000	1.000
2	(Constant)	.817	.160		5.096	.000	.497	1.137					
	Prompt Services as Promised	.473	.080	.520	5.911	.000	.314	.633	.921	.588	.240	.213	4.704
	LADJ - personal attention	.388	.076	.452	5.136	.000	.237	.539	.913	.534	.208	.213	4.704
3	(Constant)	.761	.158		4.822	.000	.446	1.076					
	Prompt Services as Promised	.304	.109	.333	2.785	.007	.086	.521	.921	.326	.110	.108	9.238
	LADJ - personal attention	.395	.073	**.460**	5.376	.000	.248	.541	.913	.555	.212	.212	4.712
	LAdj - maintained records	.174	.078	.200	2.223	.030	.018	.330	.862	.266	.088	.192	5.197

a. Dependent Variable: oSAT_Loss Adjuster

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Collinearity Diagnostics[a,b]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Prompt Services as Promised	LADJ - personal attention	LAdj - maintained records
1	1	1.908	1.000	.05	.05		
	2	.092	4.542	.95	.95		
2	1	2.859	1.000	.02	.00	.00	
	2	.121	4.862	.97	.04	.06	
	3	.021	11.792	.01	.95	.93	
3	1	3.817	1.000	.01	.00	.00	.00
	2	.130	5.412	.99	.01	.03	.02
	3	.040	9.829	.00	.00	.53	.42
	4	.013	17.277	.00	.99	.44	.55

a. Dependent Variable: oSAT_Loss Adjuster

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Casewise Diagnostics[a]

Case Number	Std. Residual	oSAT_Loss Adjuster	Predicted Value	Residual
24	3.014	5	3.38	1.622
91	3.014	5	3.38	1.622

a. Dependent Variable: oSAT_Loss Adjuster

Residuals Statistics[a,b]

	"HoldOut Sample Excluded" = Yes (Selected)					"HoldOut Sample Excluded" ~= Yes (Unselected)				
	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.76	5.99	4.25	1.591	95	.91	5.99	4.51	2.431	4
Residual	-.995	1.622	-.043	.520	93	-.913	.005	-.256	.442	4
Std. Predicted Value	-2.190	1.141	.033	1.013	95	-2.094	1.141	.194	1.547	4
Std. Residual	-1.848	3.014	-.079	.966	93	-1.695	.010	-.476	.821	4

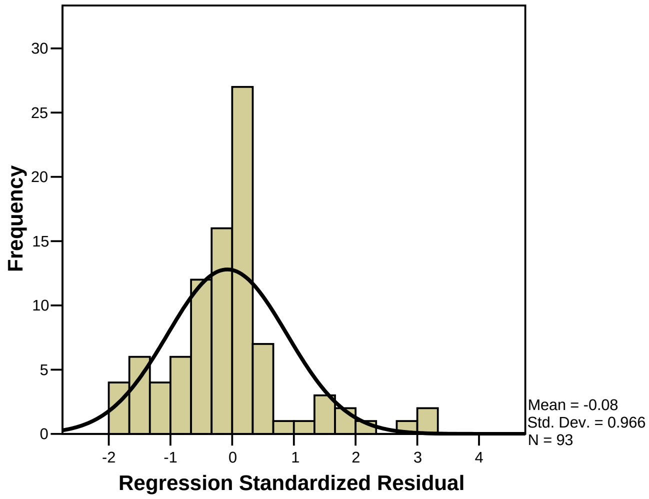
a. Dependent Variable: oSAT_Loss Adjuster

b. Pooled Cases

Charts

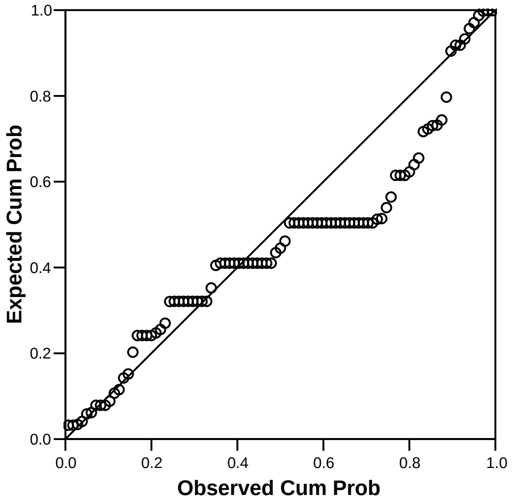
Histogram of Selected Cases

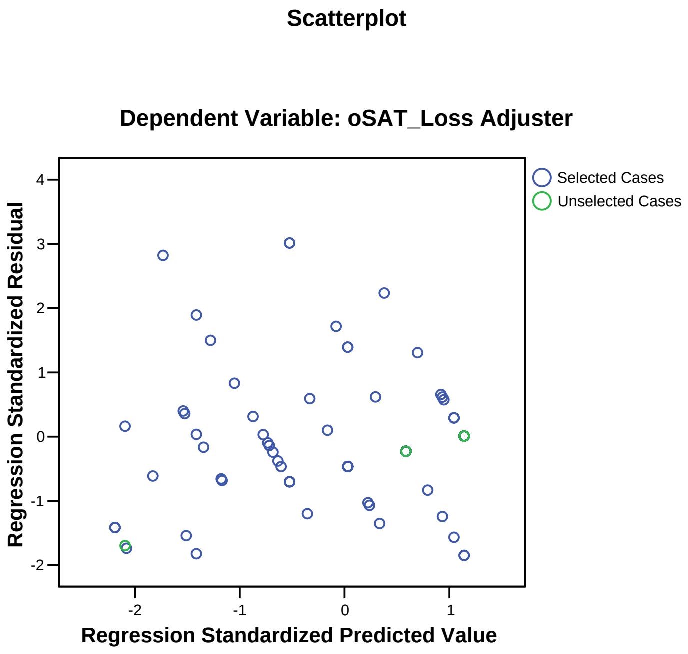
Dependent Variable: oSAT_Loss Adjuster



Normal P-P Plot of Standardized Residual for Selected Cases

Dependent Variable: oSAT_Loss Adjuster





Scatterplot
Dependent Variable: oSAT_Loss Adjuster
Selected Cases
Unselected Cases
Regression Standardized Residual
Regression Standardized Predicted Value
4
3
2
1
0
-1
-2
-2
-1
0
1

Regression for oSAT_Contractor

Descriptive Statistics[a]

	Mean	Std. Deviation	N
oSAT_Contractor	3.91	1.753	112
KTOR - staff appearance	3.60	1.459	106
Ktor - vehicle appearance	3.68	1.367	104
Ktor - solutions were appropriate	3.67	1.687	107
Ktor - never too busy	3.53	1.741	106
Ktor - easy to contact contractor	3.58	1.780	105
Ktor - knowledge & competence	3.78	1.709	108
Ktor - understood my problems	3.81	1.748	108
Ktor - relevant experience	3.93	1.706	108
Ktor - good level of supervision	3.59	1.854	105
Ktor - we had similar views on important issues	3.65	1.860	105
Ktor - up-to-date equipment and tools	3.95	1.556	107
Ktor - good quality of repair works	3.82	1.816	107
Ktor - kept property tidy	3.63	1.796	104
Ktor - protection to existing structure and contents	3.66	1.766	104
Ktor - size of contractor's org.	3.80	1.756	105
KTOR - fulfilled promises timely	3.51	1.809	107
Ktor - sympathetic to problems	3.68	1.655	105
Ktor - dependable	3.57	1.792	107
Ktor - maintained records	3.67	1.726	99
Ktor - did work in timely manner	3.51	1.878	106
Ktor - consistent point of contact	3.77	1.759	95
KTOR - told when to expect services	3.71	1.727	107
Ktor - returned calls promptly	3.56	1.835	103
Ktor - prompt services	3.47	1.840	105
Ktor - willing to help me	3.74	1.720	106
KTOR - trustworthy	3.90	1.837	107
Ktor - felt safe to deal with	3.89	1.850	107
Ktor - were polite	4.17	1.568	108
Ktor - support for employees	3.73	1.857	97
KTOR - personal attention	3.82	1.739	106
Ktor - understood my needs	3.83	1.718	105
Ktor - came to work at convinient times	3.80	1.781	104
Ktor - had my interests at heart	3.54	2.034	105

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	Ktor - had my interests at heart	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	Ktor - felt safe to deal with	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	Ktor - size of contractor's org.	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	Ktor - did work in timely manner	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
5	Ktor - kept property tidy	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
6	Ktor - knowledge & competence	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
7	.	Ktor - had my interests at heart	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a. Dependent Variable: oSAT_Contractor

b. Models are based only on cases for which "HoldOut Sample Excluded" = Yes

Model Summary[h,i]

Model	R "HoldOut Sample Excluded" = Yes (Selected)	R "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.893[a]		.798	.796	.792
2	.918[b]		.842	.838	.706
3	.929[c]		.862	.857	.663
4	.934[d]		.873	.867	.640
5	.939[e]		.882	.874	.622
6	.942[f]		**.888**	.879	.609
7	.940[g]	.933	.884	.877	.616

a. Predictors: (Constant), Ktor - had my interests at heart

b. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with

c. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org.

d. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner

e. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy

f. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contracto org., Ktor - did work in timely manner, Ktor - kept property tidy, Ktor - knowledge & competence

g. Predictors: (Constant), Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy, Ktor - knowledge & competence

h. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

i. Dependent Variable: oSAT_Contractor

ANOVA[h,i]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	203.599	1	203.599	324.406	.000[a]
	Residual	51.464	82	.628		
	Total	255.062	83			
2	Regression	214.715	2	107.357	215.528	.000[b]
	Residual	40.347	81	.498		
	Total	255.062	83			
3	Regression	219.905	3	73.302	166.800	.000[c]
	Residual	35.157	80	.439		
	Total	255.062	83			
4	Regression	222.691	4	55.673	135.865	.000[d]
	Residual	32.371	79	.410		
	Total	255.062	83			
5	Regression	224.928	5	44.986	116.441	.000[e]
	Residual	30.134	78	.386		
	Total	255.062	83			
6	Regression	226.504	**6**	37.751	**101.784**	.000[f]
	Residual	28.558	**77**	.371		
	Total	255.062	83			
7	Regression	225.505	5	45.101	119.019	.000[g]
	Residual	29.557	78	.379		
	Total	255.062	83			

a. Predictors: (Constant), Ktor - had my interests at heart

b. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with

c. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org.

d. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner

e. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy

f. Predictors: (Constant), Ktor - had my interests at heart, Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy, Ktor - knowledge & competence

g. Predictors: (Constant), Ktor - felt safe to deal with, Ktor - size of contractor's org., Ktor - did work in timely manner, Ktor - kept property tidy, Ktor - knowledge & competence

h. Dependent Variable: oSAT_Contractor

i. Selecting only cases for which "HoldOut Sample Excluded" = Yes

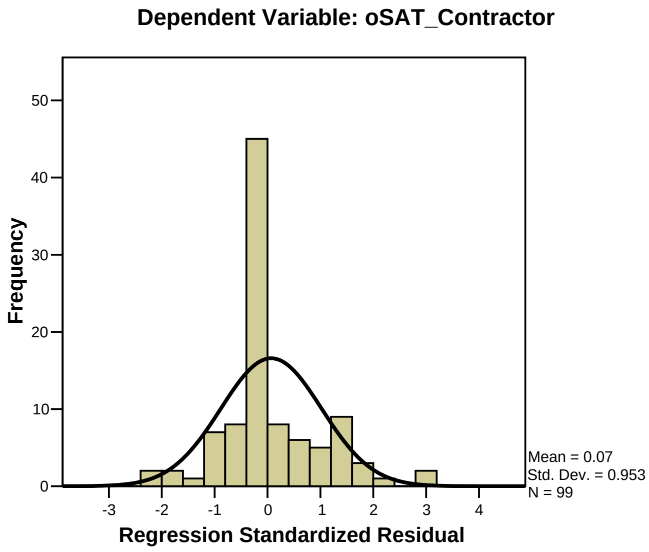
Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients			95% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.182	.174		6.777	.000	.835	1.529					
	Ktor - had my interests at heart	.770	.043	.893	18.011	.000	.685	.855	.893	.893	.893	1.000	1.000
2	(Constant)	.749	.180		4.154	.000	.390	1.108					
	Ktor - had my interests at heart	.468	.074	.543	6.298	.000	.320	.616	.893	.573	.278	.262	3.812
	Ktor - felt safe to deal with	.386	.082	.408	4.724	.000	.224	.549	.874	.465	.209	.262	3.812
3	(Constant)	.461	.189		2.441	.017	.085	.837					
	Ktor - had my interests at heart	.332	.080	.385	4.124	.000	.172	.492	.893	.419	.171	.198	5.050
	Ktor - felt safe to deal with	.355	.077	.374	4.587	.000	.201	.509	.874	.456	.190	.259	3.866
	Ktor - size of contractor's org.	.236	.069	.236	3.437	.001	.099	.372	.810	.359	.143	.365	2.738
4	(Constant)	.439	.183		2.404	.019	.076	.803					
	Ktor - had my interests at heart	.240	.085	.278	2.811	.006	.070	.409	.893	.302	.113	.164	6.090
	Ktor - felt safe to deal with	.290	.079	.306	3.689	.000	.134	.447	.874	.383	.148	.233	4.290
	Ktor - size of contractor's org.	.200	.068	.200	2.960	.004	.066	.335	.810	.316	.119	.350	2.854
	Ktor - did work in timely manner	.209	.080	.224	2.607	.011	.049	.369	.869	.281	.104	.218	4.592
5	(Constant)	.466	.178		2.622	.011	.112	.820					
	Ktor - had my interests at heart	.247	.083	.286	2.980	.004	.082	.412	.893	.320	.116	.164	6.098
	Ktor - felt safe to deal with	.372	.084	.393	4.450	.000	.206	.539	.874	.450	.173	.195	5.139
	Ktor - size of contractor's org.	.241	.068	.241	3.554	.001	.106	.376	.810	.373	.138	.328	3.045
	Ktor - did work in timely manner	.262	.081	.281	3.242	.002	.101	.424	.869	.345	.126	.201	4.966
	Ktor - kept property tidy	-.197	.082	-.202	-2.406	.018	-.360	-.034	.779	-.263	-.094	.216	4.636
6	(Constant)	.349	.183		1.907	.060	-.015	.714					
	Ktor - had my interests at heart	.153	.093	.177	1.641	.105	-.033	.338	.893	.184	.063	.125	8.026
	Ktor - felt safe to deal with	.340	.083	**.359**	4.081	.000	.174	.506	.874	.422	.156	.188	5.322
	Ktor - size of contractor's org.	.191	.071	.191	2.703	.008	.050	.332	.810	.294	.103	.290	3.449
	Ktor - did work in timely manner	.286	.080	**.307**	3.571	.001	.127	.446	.869	.377	.136	.197	5.071
	Ktor - kept property tidy	-.212	.080	-.217	-2.637	.010	-.372	-.052	.779	-.288	-.101	.214	4.676
	Ktor - knowledge & competence	.195	.095	.190	2.061	.043	.007	.383	.862	.229	.079	.171	5.841
7	(Constant)	.239	.172		1.390	.169	-.104	.583					
	Ktor - felt safe to deal with	.375	.081	.396	4.607	.000	.213	.537	.874	.462	.178	.201	4.973
	Ktor - size of contractor's org.	.204	.071	.204	2.868	.005	.062	.345	.810	.309	.111	.293	3.408
	Ktor - did work in timely manner	.339	.074	.364	4.580	.000	.192	.487	.869	.460	.177	.236	4.242
	Ktor - kept property tidy	-.214	.081	-.219	-2.631	.010	-.376	-.052	.779	-.286	-.101	.214	4.675
	Ktor - knowledge & competence	.271	.083	.264	3.252	.002	.105	.437	.862	.346	.125	.225	4.438

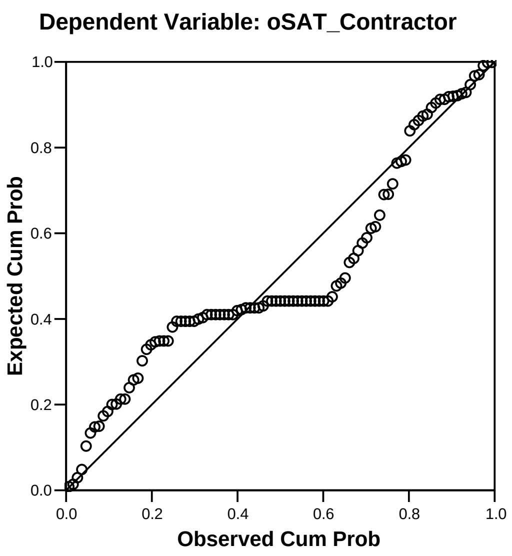
a. Dependent Variable: oSAT_Contractor

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

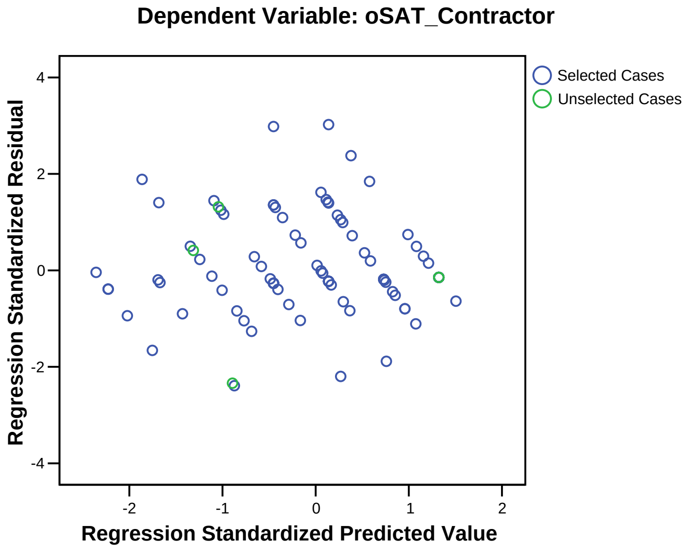
Histogram of Selected Cases



Normal P-P Plot of Standardized Residual for Selected Cases



Scatterplot



N. HYPOTHESIS 3 (H_3 ANALYSIS OUTPUT

Factor Analysis

Correlation Matrix

		OSAT_CLAIM PROCESS	OSAT_ FINANCIAL ASPECTS	OSAT_ REPAIRS
Correlation	OSAT_CLAIM PROCESS	1.000	.740	.539
	OSAT_FINANCIAL ASPECTS	.740	1.000	.573
	OSAT_REPAIRS	.539	.573	1.000

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.688
Bartlett's Test of Sphericity	Approx. Chi-Square	139.736
	df	3
	Sig.	.000

Communalities

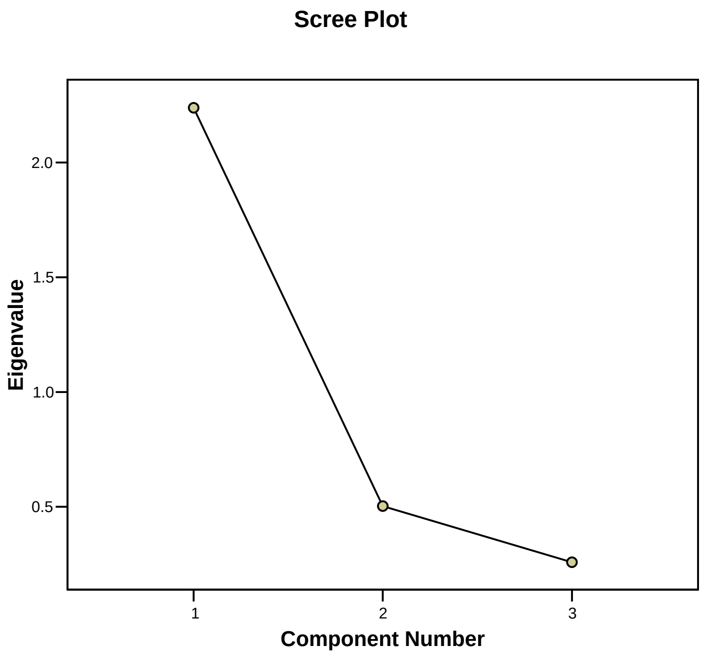
	Initial	Extraction
OSAT_CLAIM PROCESS	1.000	.786
OSAT_FINANCIAL ASPECTS	1.000	.810
OSAT_REPAIRS	1.000	.643

Extraction Method: Principal Component Analysis.

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.239	74.622	74.622	2.239	74.622	74.622
2	.503	16.767	91.389			
3	.258	8.611	100.000			

Extraction Method: Principal Component Analysis.



Component Matrix[a]

	Component
	1
OSAT_CLAIM PROCESS	.886
OSAT_FINANCIAL ASPECTS	.900
OSAT_REPAIRS	.802

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Factor Analysis (Extraction of Components)

Component Matrix[a]

a. 2 components extracted.

Rotated Component Matrix[a]

	Component	
	1	2
OSAT_CLAIM PROCESS	**.903**	
OSAT_FINANCIAL ASPECTS	**.866**	.334
OSAT_REPAIRS	.311	**.950**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	1.662	55.411	55.411
2	1.079	35.978	91.389

Extraction Method: Principal Component Analysis.

Component Transformation Matrix

Component	1	2
1	.817	.576
2	-.576	.817

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

O. HYPOTHESIS 4 (H_4) ANALYSIS OUTPUT

Regression – OSAT_ALL as DV

Descriptive Statistics[a]

	Mean	Std. Deviation	N
OSAT_ALL	4.1774	1.37568	116
oSAT_Insurer	4.27	1.624	106
oSAT_Loss Adjuster	4.20	1.657	104
oSAT_Contractor	3.91	1.753	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Correlations[a]

		OSAT_ALL	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_Contractor
Pearson Correlation	OSAT_ALL	1.000	.757	.772	.831
	oSAT_Insurer	.757	1.000	.845	.406
	oSAT_Loss Adjuster	.772	.845	1.000	.459
	oSAT_Contractor	.831	.406	.459	1.000
Sig. (1-tailed)	OSAT_ALL	.	.000	.000	.000
	oSAT_Insurer	.000	.	.000	.000
	oSAT_Loss Adjuster	.000	.000	.	.000
	oSAT_Contractor	.000	.000	.000	.
N	OSAT_ALL	116	106	104	112
	oSAT_Insurer	106	106	97	102
	oSAT_Loss Adjuster	104	97	104	100
	oSAT_Contractor	112	102	100	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: OSAT_ALL

c. Models are based only on cases for which "HoldOut Sample Excluded" = Yes

Model Summary[b,c]

Model	R "HoldOut Sample Excluded" = Yes (Selected)	R "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.956[a]	.997	**.914**	.912	.40877

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

c. Dependent Variable: OSAT_ALL

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	166.139	3	55.380	331.423	.000[a]
	Residual	15.540	93	.167		
	Total	181.679	96			

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Dependent Variable: OSAT_ALL

c. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Collinearity Diagnostics[a,b]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
1	1	3.796	1.000	.01	.00	.00	.01
	2	.106	5.994	.00	.07	.05	.81
	3	.079	6.934	.98	.02	.05	.16
	4	.020	13.877	.02	.91	.90	.02

a. Dependent Variable: OSAT_ALL

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95% Confidence Interval for B Lower Bound	95% Confidence Interval for B Upper Bound	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.389	.129		3.006	.003	.132	.646					
	oSAT_Insurer	.278	.048	.328	5.776	.000	.182	.373	.757	.514	.175	.286	3.501
	oSAT_Loss Adjuster	.184	.048	.221	3.794	.000	.088	.280	.772	.366	.115	.270	3.705
	oSAT_Contractor	.468	.027	**.596**	17.452	.000	.415	.521	.831	.875	.529	.788	1.269

a. Dependent Variable: OSAT_ALL

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Casewise Diagnostics[a]

Case Number	Std. Residual	OSAT_ALL	Predicted Value	Residual
65	4.420	3.13	1.3182	1.80679
91	3.801	4.25	2.6961	1.55389

a. Dependent Variable: OSAT_ALL

Residuals Statistics[a,b]

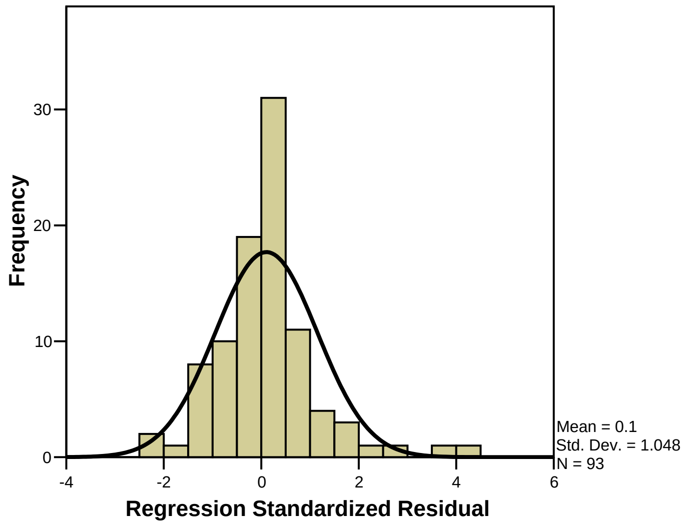
	"HoldOut Sample Excluded" = Yes (Selected)					"HoldOut Sample Excluded" ~= Yes (Unselected)				
	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.3889	5.9648	4.2152	1.34035	93	.8568	5.9648	4.1049	2.15383	5
Residual	-.92684	1.80679	.04289	.42857	93	-.31759	.07959	-.05487	.16281	5
Std. Predicted Value	-2.880	1.359	.029	1.019	93	-2.524	1.359	-.055	1.637	5
Std. Residual	-2.267	4.420	.105	1.048	93	-.777	.195	-.134	.398	5

a. Dependent Variable: OSAT_ALL

b. Pooled Cases

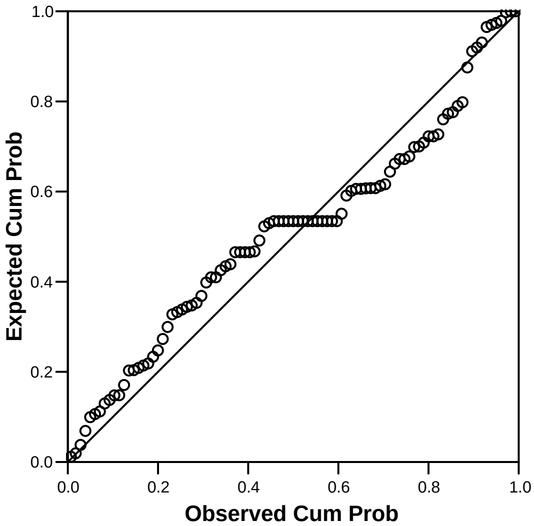
Histogram of Selected Cases

Dependent Variable: OSAT_ALL



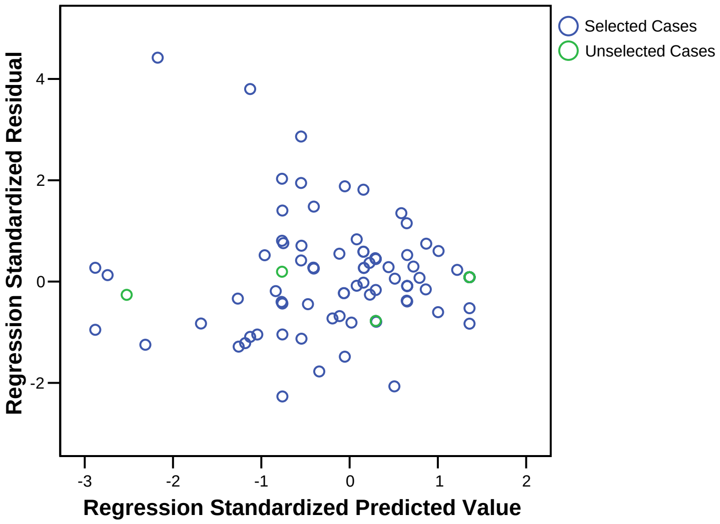
Normal P-P Plot of Standardized Residual for Selected Cases

Dependent Variable: OSAT_ALL



Scatterplot

Dependent Variable: OSAT_ALL



Regression – OSAT_Repair Works as DV
Regression

Descriptive Statistics[a]

	Mean	Std. Deviation	N
OSat_Repair Works	4.0965	1.64004	114
oSAT_Insurer	4.27	1.624	106
oSAT_Loss Adjuster	4.20	1.657	104
oSAT_Contractor	3.91	1.753	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Correlations[a]

		OSat_Repair Works	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
Pearson Correlation	OSat_Repair Works	1.000	.448	.478	.938
	oSAT_Insurer	.448	1.000	.845	.406
	oSAT_Loss Adjuster	.478	.845	1.000	.459
	oSAT_Contractor	.938	.406	.459	1.000
Sig. (1-tailed)	OSat_Repair Works	.	.000	.000	.000
	oSAT_Insurer	.000	.	.000	.000
	oSAT_Loss Adjuster	.000	.000	.	.000
	oSAT_Contractor	.000	.000	.000	.
N	OSat_Repair Works	114	104	102	112
	oSAT_Insurer	104	106	97	102
	oSAT_Loss Adjuster	102	97	104	100
	oSAT_Contractor	112	102	100	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	oSAT_ Contractor, oSAT_ Insurer, oSAT_ Loss Adjuster[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: OSat_Repair Works

c. Models are based only on cases for which "HoldOut Sample Excluded" = Yes

Model Summary[b,c]

Model	R: "HoldOut Sample Excluded" = Yes (Selected)	R: "HoldOut Sample Excluded" ~= Yes (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	.941[a]	.998	**.885**	.881	.56497

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

c. Dependent Variable: OSat_Repair Works

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	228.529	3	76.176	238.657	.000[a]
	Residual	29.684	93	.319		
	Total	258.213	96			

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Dependent Variable: OSat_Repair Works

c. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Collinearity Diagnostics[a,b]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions: (Constant)	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
1	1	3.796	1.000	.01	.00	.00	.01
	2	.106	5.994	.00	.07	.05	.81
	3	.079	6.934	.98	.02	.05	.16
	4	.020	13.877	.02	.91	.90	.02

a. Dependent Variable: OSat_Repair Works

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95% Confidence Interval for B Lower Bound	95% Confidence Interval for B Upper Bound	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.442	.179		2.474	.015	.087	.797					
	oSAT_Insurer	.098	.066	.097	1.476	.143	-.034	.230	.448	.151	.052	.286	3.501
	oSAT_Loss Adjuster	-.021	.067	-.021	-.309	.758	-.154	.112	.478	-.032	-.011	.270	3.705
	oSAT_Contractor	.849	.037	**.908**	**22.926**	**.000**	.776	.923	.938	.922	.806	.788	1.269

a. Dependent Variable: OSat_Repair Works

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Casewise Diagnostics[a]

Case Number	Std. Residual	OSat_Repair Works	Predicted Value	Residual
65	3.772	3.50	1.3692	2.13084
91	3.842	3.00	.8292	2.17082
106	-3.049	1.50	3.2228	-1.72285

a. Dependent Variable: OSat_Repair Works

Residuals Statistics[a,b]

	"HoldOut Sample Excluded" = Yes (Selected)					"HoldOut Sample Excluded" ~= Yes (Unselected)				
	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.4217	6.0240	4.1486	1.56602	93	1.2918	6.0034	3.9953	2.11027	5
Residual	-1.72285	2.17082	.01266	.57840	93	-.22706	.20821	.00473	.15592	5
Std. Predicted Value	-2.382	1.249	.034	1.015	93	-1.818	1.236	-.066	1.368	5
Std. Residual	-3.049	3.842	.022	1.024	93	-.402	.369	.008	.276	5

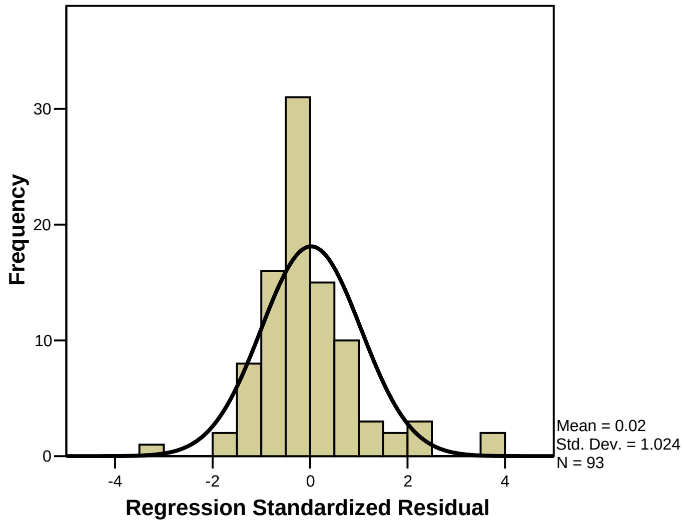
a. Dependent Variable: OSat_Repair Works

b. Pooled Cases

Charts

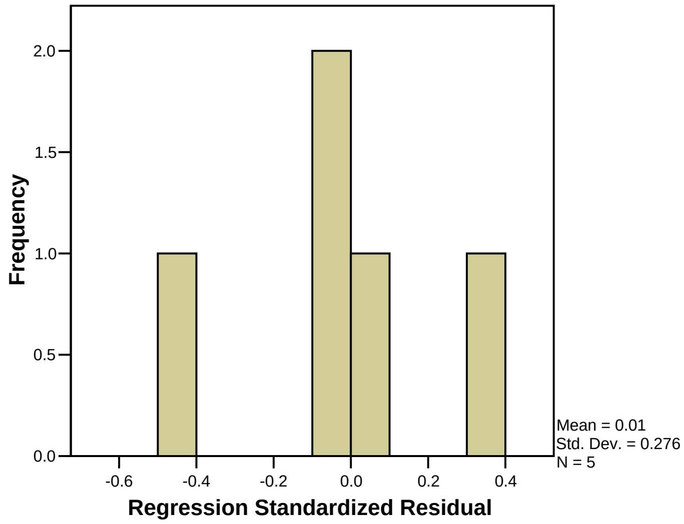
Histogram of Selected Cases

Dependent Variable: OSat_Repair Works



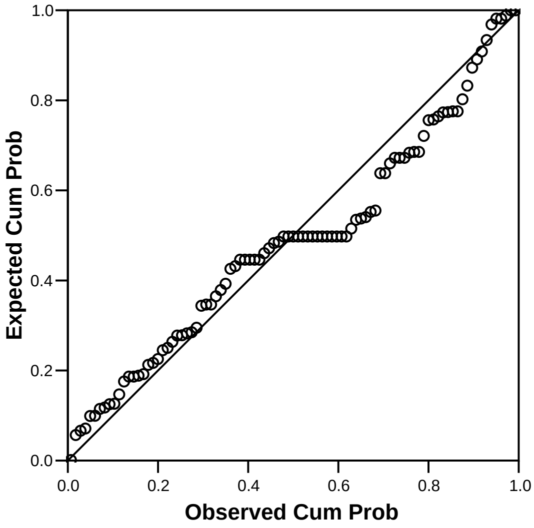
Histogram of Unselected Cases

Dependent Variable: OSat_Repair Works



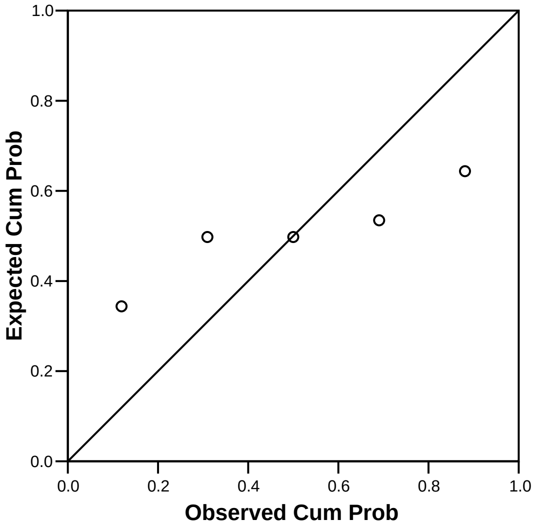
Normal P-P Plot of Standardized Residual for Selected Cases

Dependent Variable: OSat_Repair Works

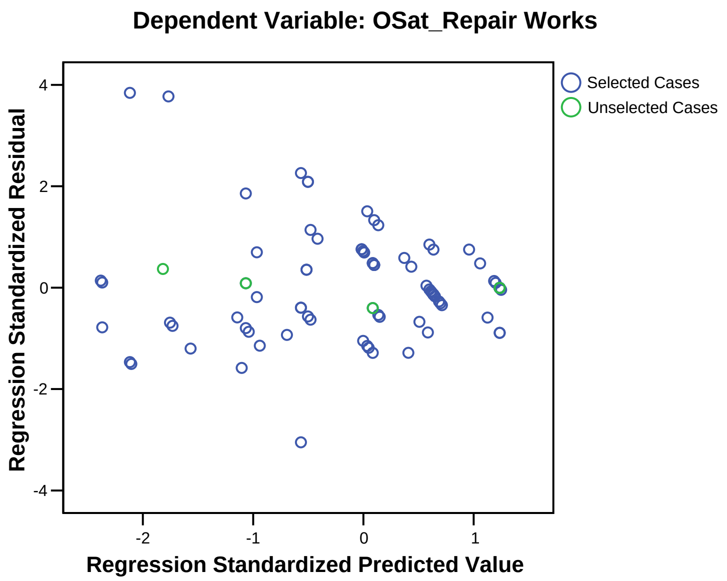


Normal P-P Plot of Standardized Residual for Unselected Cases

Dependent Variable: OSat_Repair Works



Scatterplot



Regression – OSAT_Process & Settlement as DV

Regression

Descriptive Statistics[a]

	Mean	Std. Deviation	N
OSat_Process & Settlement	4.2687	1.45072	116
oSAT_Insurer	4.27	1.624	106
oSAT_Loss Adjuster	4.20	1.657	104
oSAT_Contractor	3.91	1.753	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Correlations[a]

		OSat_ Process & Settlement	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
Pearson Correlation	OSat_Process & Settlement	1.000	.916	.922	.516
	oSAT_Insurer	.916	1.000	.845	.406
	oSAT_Loss Adjuster	.922	.845	1.000	.459
	oSAT_Contractor	.516	.406	.459	1.000
Sig. (1-tailed)	OSat_Process & Settlement	.	.000	.000	.000
	oSAT_Insurer	.000	.	.000	.000
	oSAT_Loss Adjuster	.000	.000	.	.000
	oSAT_Contractor	.000	.000	.000	.
N	OSat_Process & Settlement	116	106	104	112
	oSAT_Insurer	106	106	97	102
	oSAT_Loss Adjuster	104	97	104	100
	oSAT_Contractor	112	102	100	112

a. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Variables Entered/Removed[b,c]

Model	Variables Entered	Variables Removed	Method
1	oSAT_ Contractor, oSAT_ Insurer, oSAT_ Loss Adjuster[a]	.	Enter

a. All requested variables entered.

b. Dependent Variable: OSat_Process & Settlement

c. Models are based only on cases for which "HoldOut Sample Excluded" = Yes

Model Summary[b,c]

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate
	"HoldOut Sample Excluded" = Yes (Selected)	"HoldOut Sample Excluded" ~= Yes (Unselected)			
1	.961[a]	.996	**.924**	.922	.40544

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Unless noted otherwise, statistics are based only on cases for which "HoldOut Sample Excluded" = Yes.

c. Dependent Variable: OSat_Process & Settlement

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	186.754	3	62.251	378.708	.000[a]
	Residual	15.287	93	.164		
	Total	202.042	96			

a. Predictors: (Constant), oSAT_Contractor, oSAT_Insurer, oSAT_Loss Adjuster

b. Dependent Variable: OSat_Process & Settlement

c. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Collinearity Diagnostics[a,b]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	oSAT_Insurer	oSAT_Loss Adjuster	oSAT_ Contractor
1	1	3.796	1.000	.01	.00	.00	.01
	2	.106	5.994	.00	.07	.05	.81
	3	.079	6.934	.98	.02	.05	.16
	4	.020	13.877	.02	.91	.90	.02

a. Dependent Variable: OSat_Process & Settlement

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Coefficients[a,b]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95% Confidence Interval for B Lower Bound	95% Confidence Interval for B Upper Bound	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	.378	.128		2.949	.004	.124	.633					
	oSAT_Insurer	.420	.048	**.470**	8.814	.000	.325	.515	.916	.675	.251	.286	3.501
	oSAT_Loss Adjuster	.417	.048	**.476**	8.666	.000	.321	.512	.922	.668	.247	.270	3.705
	oSAT_Contractor	.088	.027	.106	3.312	.001	.035	.141	.516	.325	.094	.788	1.269

a. Dependent Variable: OSat_Process & Settlement

b. Selecting only cases for which "HoldOut Sample Excluded" = Yes

Casewise Diagnostics[a]

Case Number	Std. Residual	OSat_ Process & Settlement	Predicted Value	Residual
2	-3.291	4.00	5.3343	-1.33428
65	3.569	2.75	1.3032	1.44682

a. Dependent Variable: OSat_Process & Settlement

Residuals Statistics[a,b]

	"HoldOut Sample Excluded" = Yes (Selected)					"HoldOut Sample Excluded" ~= Yes (Unselected)				
	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.3784	5.9270	4.2908	1.42274	93	.4665	5.9270	4.2272	2.26384	5
Residual	-1.33428	1.44682	.06408	.41151	93	-.46649	.09866	-.12721	.28663	5
Std. Predicted Value	-2.789	1.189	.016	1.020	93	-2.726	1.189	-.030	1.623	5
Std. Residual	-3.291	3.569	.158	1.015	93	-1.151	.243	-.314	.707	5

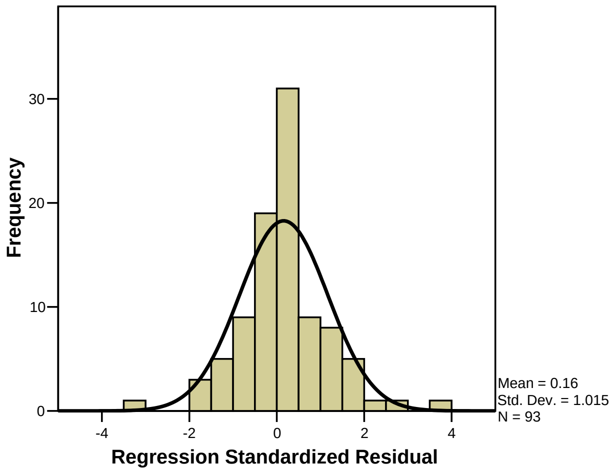
a. Dependent Variable: OSat_Process & Settlement

b. Pooled Cases

Charts

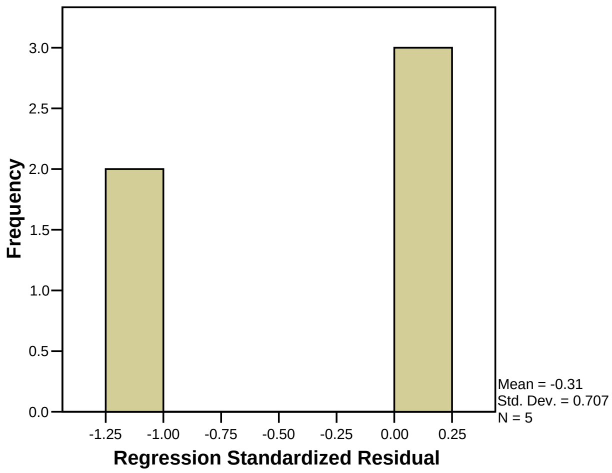
Histogram of Selected Cases

Dependent Variable: OSat_Process & Settlement



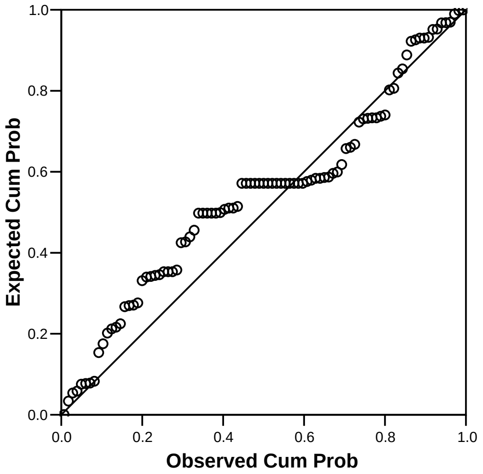
Histogram of Unselected Cases

Dependent Variable: OSat_Process & Settlement



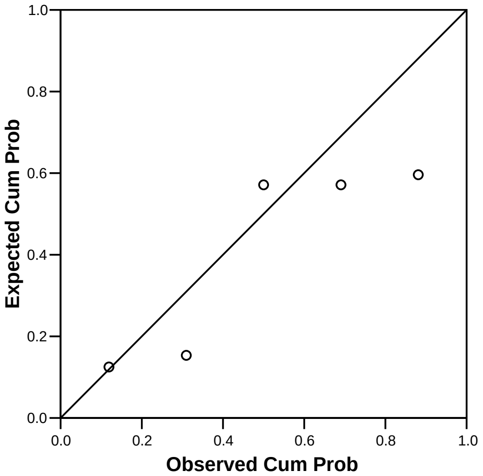
Normal P-P Plot of Standardized Residual for Selected Cases

Dependent Variable: OSat_Process & Settlement

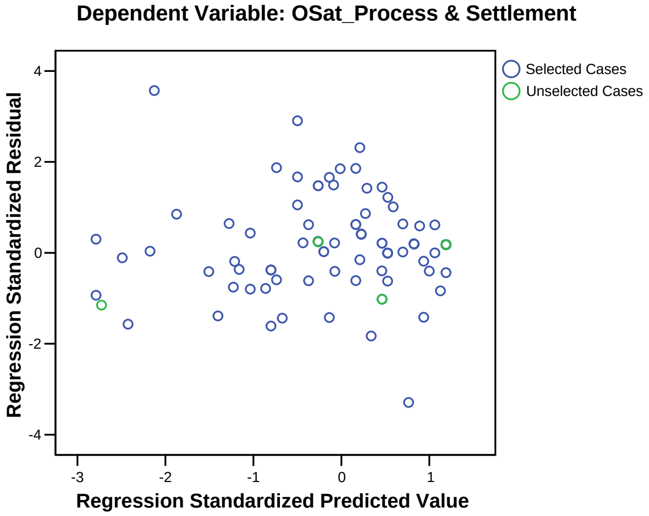


Normal P-P Plot of Standardized Residual for Unselected Cases

Dependent Variable: OSat_Process & Settlement



Scatterplot



P. HYPOTHESIS 5 (H_5) ANALYSIS OUTPUT

Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
OSat_Repair Works	< 6months	57	4.4737	1.31074	.17361	4.1259	4.8215	.00	6.00
	6-11months	44	3.9091	1.77277	.26725	3.3701	4.4481	.00	6.00
	12months & Above	16	3.2500	2.12916	.53229	2.1154	4.3846	.00	6.00
	Total	117	4.0940	1.66212	.15366	3.7897	4.3984	.00	6.00
OSat_Process & Settlement	< 6months	59	4.6808	1.11719	.14545	4.3896	4.9719	1.00	6.00
	6-11months	45	4.0963	1.43603	.21407	3.6649	4.5277	.50	6.00
	12months & Above	16	3.2656	2.22011	.55503	2.0826	4.4486	.00	6.00
	Total	120	4.2729	1.49091	.13610	4.0034	4.5424	.00	6.00
OSAT_ALL	< 6months	59	4.5692	1.04209	.13567	4.2976	4.8408	2.00	6.00
	6-11months	45	3.9870	1.38964	.20716	3.5695	4.4045	.50	6.00
	12months & Above	16	3.2578	2.07187	.51797	2.1538	4.3618	.00	6.00
	Total	120	4.1760	1.40993	.12871	3.9212	4.4309	.00	6.00

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable	(I) TIME TAKEN TO REPAIR	(J) TIME TAKEN TO REPAIR	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
OSat_Repair Works	< 6months	6-11months	.56459	.32519	.196	-.2076	1.3368
		12months & Above	1.22368*	.45846	.024	.1350	2.3124
	6-11months	< 6months	-.56459	.32519	.196	-1.3368	.2076
		12months & Above	.65909	.47307	.348	-.4643	1.7825
	12months & Above	< 6months	-1.22368*	.45846	.024	-2.3124	-.1350
		6-11months	-.65909	.47307	.348	-1.7825	.4643
OSat_Process & Settlement	< 6months	6-11months	.58449	.28172	.100	-.0843	1.2533
		12months & Above	1.41517*	.40122	.002	.4627	2.3676
	6-11months	< 6months	-.58449	.28172	.100	-1.2533	.0843
		12months & Above	.83067	.41432	.116	-.1529	1.8142
	12months & Above	< 6months	-1.41517*	.40122	.002	-2.3676	-.4627
		6-11months	-.83067	.41432	.116	-1.8142	.1529
OSAT_ALL	< 6months	6-11months	.58217	.26663	.078	-.0508	1.2151
		12months & Above	1.31140*	.37973	.002	.4100	2.2128
	6-11months	< 6months	-.58217	.26663	.078	-1.2151	.0508
		12months & Above	.72922	.39212	.155	-.2016	1.6601
	12months & Above	< 6months	-1.31140*	.37973	.002	-2.2128	-.4100
		6-11months	-.72922	.39212	.155	-1.6601	.2016

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

OSat_Repair Works

Tukey HSD[a,b]

TIME TAKEN TO REPAIR	N	Subset for alpha = .05	
		1	2
12months & Above	16	3.2500	
6-11months	44	3.9091	3.9091
< 6months	57		4.4737
Sig.		.270	.381

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 29.191.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

OSat_Process & Settlement

Tukey HSD[a,b]

TIME TAKEN TO REPAIR	N	Subset for alpha = .05	
		1	2
12months & Above	16	3.2656	
6-11months	45	4.0963	4.0963
< 6months	59		4.6808
Sig.		.069	.260

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 29.507.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

OSAT_ALL

Tukey HSD[a,b]

TIME TAKEN TO REPAIR	N	Subset for alpha = .05	
		1	2
12months & Above	16	3.2578	
6-11months	45	3.9870	3.9870
< 6months	59		4.5692
Sig.		.099	.225

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 29.507.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
OSat_Repair Works	7.707	2	114	.001
OSat_Process & Settlement	11.655	2	117	.000
OSAT_ALL	11.444	2	117	.000

ANOVA

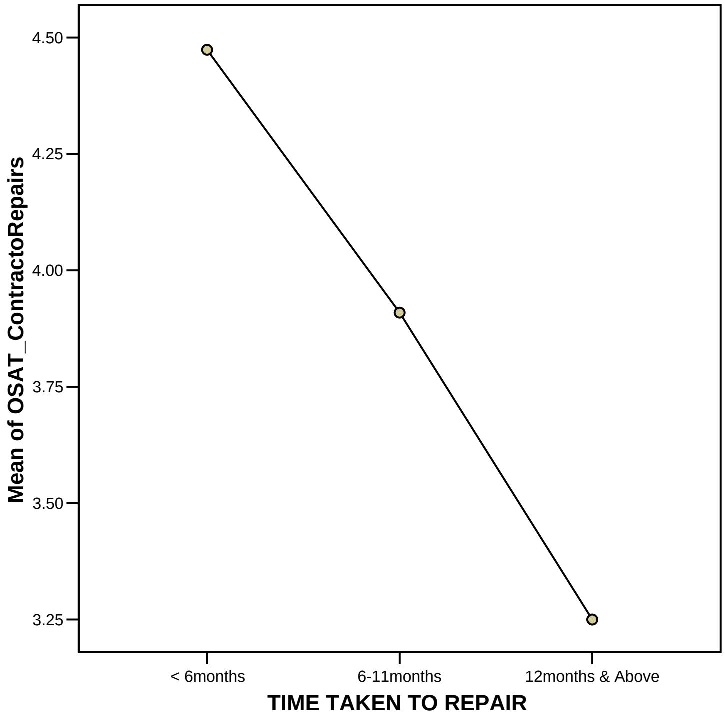
		Sum of Squares	df	Mean Square	F	Sig.
OSat_Repair Works	Between Groups	21.119	2	10.559	4.021	.021
	Within Groups	299.347	114	2.626		
	Total	320.466	116			
OSat_Process & Settlement	Between Groups	27.453	2	13.727	6.775	.002
	Within Groups	237.060	117	2.026		
	Total	264.513	119			
OSAT_ALL	Between Groups	24.218	2	12.109	6.672	.002
	Within Groups	212.343	117	1.815		
	Total	236.561	119			

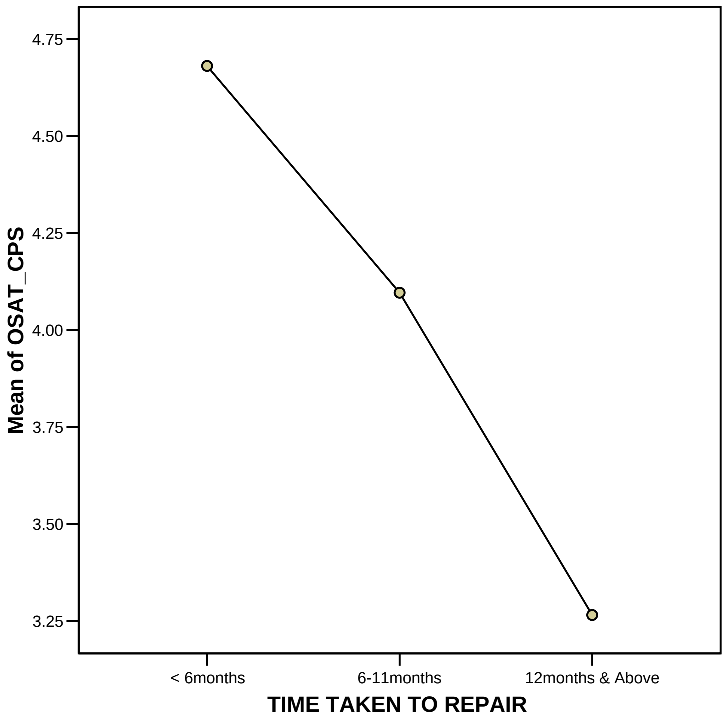
Robust Tests of Equality of Means

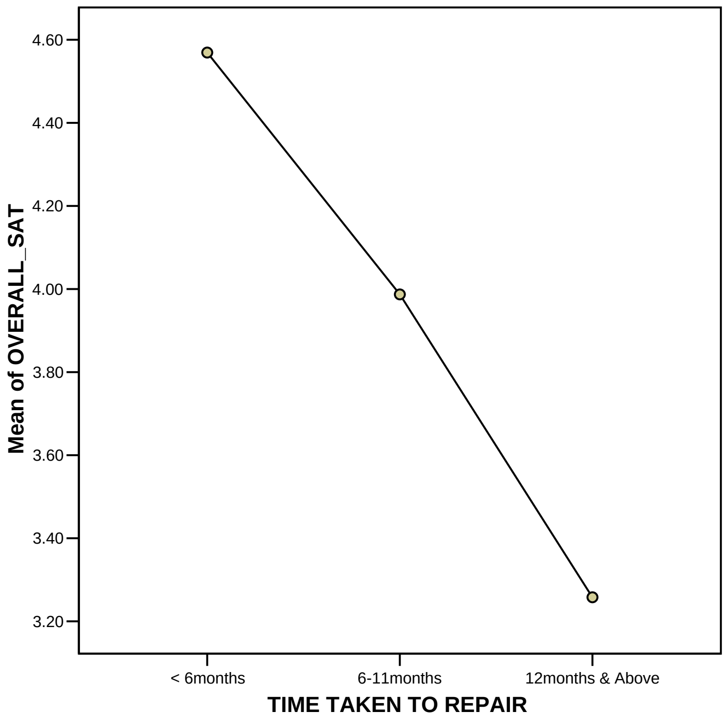
		Statistic[a]	df1	df2	Sig.
OSat_Repair Works	Welch	3.340	2	37.022	.046
	Brown-Forsythe	3.126	2	40.590	.055
OSat_Process & Settlement	Welch	4.809	2	36.050	.014
	Brown-Forsythe	4.431	2	30.430	.020
OSAT_ALL	Welch	4.969	2	35.951	.012
	Brown-Forsythe	4.420	2	31.238	.020

a. Asymptotically F distributed.

Means Plots


4.50
4.25
4.00
3.75
3.50
3.25
Mean of OSAT_ContractoRepairs
< 6months
6-11months
12months & Above
TIME TAKEN TO REPAIR


4.75
4.50
4.25
4.00
3.75
3.50
3.25
Mean of OSAT_CPS
< 6months
6-11months
12months & Above
TIME TAKEN TO REPAIR


Mean of OVERALL_SAT
4.60
4.40
4.20
4.00
3.80
3.60
3.40
3.20
< 6months
6-11months
12months & Above
TIME TAKEN TO REPAIR